





IN THE SUMMER HOLIDAYS.  
PRACTICAL GEOLOGY.  
SIX ELEMENTARY LECTURES  
Will be given by PROF. TENNANT, at his residence,  
149, STRAND, W.C.

The Lectures delivered on the subject of Geology are intended to have special reference to the important practical applications of that science to Engineering, Mining, Architecture, and Agriculture. The Geology, Strata, Porphyries, Greenstones, Clays, &c., will be described, and the minerals peculiar to each noticed. The application of Geology to pursuits connected with Mining Operations for Coal, Iron, Copper, Tin, Silver, Gold, Mercury, Antimony, Zinc, Cobalt, &c., will be specially considered. The Student is directed how to proceed in examining a new country, to collect and record his observations, and mark his specimens, in order to render them useful to more experienced geologists at home.

In order more fully to exemplify the applications of the Science, Mr. TENNANT accompanies his Classes to various Museums in London, including the Museum of Practical Geology and the British Museum; also, in Excursions into the Country, in which the actual field work of the Geologist is explained and illustrated.

**MR. TENNANT, 149, STRAND, LONDON, W.C.,**  
has FOR SALE some VALUABLE and CHOICE COLLECTIONS of MINERALS.

I.—A Collection of about 2000 MINERALS and ROCKS, with Models of Crystals, Diagrams, &c., in a painted deal Cabinet with 55 drawers and glass case on top, 9 ft. 5 in. long, 8 ft. 2 in. high, and 21 in. from back to front, removed from the Royal Military College, Woolwich. The Collection is well adapted for illustrating thirty to forty Lectures on MINERALOGY and GEOLOGY.

II.—CABINET with 60 drawers, containing 2600 species of Fossils, represented by 4500 specimens, stratigraphically arranged. This Collection, with the Collection of Minerals No. I., would form an instructive Geological Museum for a nobleman or country gentleman.

III.—TWO CABINETS, each containing 30 drawers, with upwards of 2500 Minerals, Rocks, and Fossils. This Collection is well adapted for a first-class Educational Establishment.

IV.—FIRST-CLASS GEOLOGICAL COLLECTION OF TWO CABINETS, each measuring 9 ft. 3 in. long, 2 ft. 4 in. wide, and 3 ft. 10 in. high; each containing 45 drawers, with glass case on the top of each cabinet, 4 ft. 11 in. high, and 15 in. from back to front. One Cabinet is filled with 2600 Minerals and Rocks, the other with 3400 Fossils, British and Foreign, stratigraphically arranged.

The Collection is carefully named, and consists of 6000 specimens, many very choice, and selected principally from the Duke of Buckingham's (Stowe sale), Marchioness of Hastings, Sir John St. Aubyn's, Drs. Buckland, Bowdler, Mantell, and other celebrated collections. The first Gold Nugget received from Australia, and a Gold Nugget from Achantee, weight 5 oz., is in the collection; also a fine series of Diamonds, illustrating crystalline form and colour, from India, Brazil, South Africa, and Australia.

Any person wishing to become practically acquainted with the interesting and important study of Mineralogy and Geology will find this a good opportunity to obtain an instructive and valuable Geological Museum, scientifically arranged, the specimens having been collected with care and at great expense during the last 35 years. Price £5000.

V.—MAGNIFICENT CABINET with 26 drawers, containing upwards of 1000 specimens of Minerals, Rocks, and Fossils in good condition and recently arranged. Price £5000.

VI.—MR. TENNANT expects shortly to have ready for sale a choice and extensive collection of RECENT SHELLS, MINERALS, ROCKS, and FOSSILS, in a large and well-made Cabinet of 108 drawers, with glass Bookcase on the top. The Cabinet was the property of the late Mrs. Mawe, and contains her private collection of Recent Shells and Minerals. Amongst the latter are some Crystals of Gold, figured in Mawe's Travels in Brazil, and supposed to be unique. The Bookcase contains many of the recent works on Geology by Buckland, Lyell, Mantell, Murchison, Phillips, and others, and 26 Volumes of the publication of the Paleontographical Society, &c.

JAMES TENNANT, Mineralogist (by appointment) to Her Majesty,  
June, 1874. 149, STRAND, LONDON, W.C.

IMPORTANT TO ALL INTERESTED IN MINES.

Crown 8vo, cloth extra, price 7s. 6d.  
**THE PRACTICAL ASSAYER:**  
A GUIDE TO MINERS AND EXPLORERS.  
By OLIVER NORTH. With Tables and Illustrative Woodcuts.

\* \* \* This book gives directions, in the plainest and simplest form, for assaying bullion and the baser metals by the cheapest, quickest, and best methods. Persons interested in mining property will be enabled, by following the instructions given, to form a tolerably correct idea of the value of ores, without any previous knowledge of assaying; while to the young man intending to seek his fortune in mining countries it is indispensable.

London: CHATTO and WINDUS, Publishers, 74 and 75, Piccadilly, W.

**THE JOURNAL OF THE IRON AND STEEL INSTITUTE,**  
No. II. (1873), IS NOW READY.

CONTENTS.  
Proceedings at General Meeting in Belgium, August, 1873: President's address, and reply thereto, by M. Truesenier; a Geological Review of the Belgian Minerals, by M. Renier Malherbe; the Oolitic Iron Ores of Luxembourg and Lorraine, by M. A. Habets; Buttgenbach's System of Constructing Blast Furnaces, by Franz Buttgenbach, with discussion; the Economical Preparation of Iron for the Danke's Puddling Furnace, by Mr. Charles Wood, with discussion; Notes on the Belgian Coke Manufacture, by M. Max Gombel, on Winding and Other Appliances for Coal Mining, by M. Guillaume Kamp; the Diamond Rock-Boring Drill, by Major Beaumont, M.P., with discussion; Rise and Progress of the Iron and Steel Industries in Belgium, by M. Julien Deby, C.E.; Rationale of the Combustion of Gases, considered in Relation to an increased Supply of Heat, by M. Charles Boutmy; Summary of a Statement entitled "Statistical Relative to the Improvements of the Construction of Metal Works," by M. D. Soliman; Phosphorus, Phosphoric Acid, and its Principal Industrial Uses, by M. C. Montefiore Levi; Clos-Lid Rollers of M. Paul Haverz, by M. Jules Haverz; Communication relative to Converting Pig-iron into Steel by Bessard's Process, by M. Aristide Bessard; Cases decided in the Iron, Steel, and Wrought-iron, by Mr. John Barry; Prof. Turner on the Value of Superheated Blast in the Working of Blast Furnaces; Foreign Secretary's Report; Notes on the Iron and Steel Industries of the United Kingdom, and List of Donations; an Account of the Fets, &c., at Liege, 1873; Maps and Illustrations.—Price 7s. 6d.

London: E. and F. N. SPON, 48, Charing Cross.

Second Edition. Just published, price 8s. 6d.  
**A NEW GUIDE TO THE IRON TRADE,**  
OR, MILL-MANAGERS' AND STOCK-TAKERS' ASSISTANT;

Comprising a Series of New and Comprehensive Tables, practically arranged to show at one view the Weight of Iron required to produce Boiler plates, Sheet-iron, and Flat, Square, and Round Bars, as well as Hoop or Strip Iron, of any dimensions. To which is added a variety of Tables for the convenience of Merchants, including a Russian Table.

By JAMES ROSE,  
Batman's Hill Ironworks, Bradley, near Bilston.

**OPINIONS OF THE PRESS.**

"The Tables are plainly laid down, and the information desired can be instantaneously obtained."—*Mining Journal*.  
"The work is the result of much labour, and is decidedly valuable."—*Engineer*.  
"By its use many hours time spent in tedious calculations will be saved and many very serious errors avoided."—*Wolverhampton Chronicle*.

London: MINING JOURNAL Office, 20, Fleet-street; and to be had of all Book-sellers.

**GUIDE TO INVESTMENTS.**

Published monthly. Post free.  
**SPARGO'S "GUIDE TO INVESTMENTS"**

affords information (ample and correct) of all the best-paying investments. Capitalists and men of business should consult the "Guide" for reliable and valuable intelligence.

THOMAS SPARGO,  
Queen's Buildings, Queen Victoria-street, Mansion House, London, E.C.  
Established Twenty-six Years.

**MINES AND MINING.**

Now in the Press, and will shortly be issued.  
**SPARGO'S ANNUAL STATISTICS AND OBSERVATIONS ON**

THE MINES OF CORNWALL, DEVON, AND WALES.

The work will contain particulars of all the important mines in the counties referred to, and will be illustrated by maps and sections of the various districts, forming a complete Guide to Mining Investors.

Price 3s. 6d.; by post 3s. 8d.  
To secure an early copy subscribers are requested to forward their application as early as possible. Only a limited number will be issued.

Queen's Buildings, Queen Victoria-street, Mansion House, London, E.C.  
Messrs. WERTHEIMER and LEE, 1½, Finsbury Circus, London, E.C.

**INVESTMENT.—MESSRS. TREDINNICK'S SELECTED LIST**

OF ONE HUNDRED SECURITIES, paying 5, 20, up to 50 per cent. annually, free on application. Daily consulted by Investors.

82, FLEET STREET, LONDON, E.C.

**MESSRS. TREDINNICK, 32, FLEET STREET, LONDON,**

E.C. DEALERS IN STOCKS, SHARES (Home, Foreign, and Colonial), BANKS, RAILWAYS, MINES, GAS SECURITIES, and MISCELLANEOUS.

Consultations (personally). Twelve to Three. Enquiries answered, and Selected List gratuitously upon application.

Messrs. TREDINNICK deal in Great Western, Northern, London and North-Western, and Midland Stocks, London and Westminster, Union, Joint Stock, and London and County Banks, Water, Docks, Gas, Insurance, Telegraphs, and Miscellaneous.

Messrs. TREDINNICK deal in sound British Mines, and are buyers of shares in Roman Gravel, Tankerville, Van, Dolcoath, Tincroft, and Van Consoles. Sound progressive shares can most be purchased with advantage. These are sure of an advance rapidly.—32, Fleet-street, London, E.C.

**THE NEWCASTLE DAILY CHRONICLE**

(Established 1844.)  
THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER  
Office, Westgate-road, Newcastle-upon-Tyne; 50, Howard street, North Shields; 198, High-street, Sunderland.

**ISSUE OF 2000 PREFERENCE SHARES OF £10 EACH,**  
bearing interest at the rate of 25 per cent. per annum, with special right to increased dividends, as hereinafter stated, of which 700 shares have been already applied for.

**THE McHENRY MINING COMPANY**  
(LIMITED).

Capital £300,000, in 24,000 Ordinary Shares of £10 each,  
and 6000 Preference Shares of £10 each.

Payment on application, £1 per share; allotment, £3; 1st July, 1874, £3;  
1st August, 1874, £3 = £10.

**DIRECTORS.**  
ALFRED ALLEN, Esq. (Messrs. Eives and Allen, Agents of the  
Inman Line of Steamers), 61, King William-street.

J. S. BERGHEIM, Esq., 27, Martin's-lane, Cannon-street, E.C.  
Col. DAUBNEY, C.B., 8, Eaton-terrace, S.W. (Chairman of the  
Winamuck Silver Mining Company of Utah, Limited).

(With power to add to their number.)

**SOLICITORS.**  
Messrs. HENRY KIMBER and CO., 79, Lombard-street.

**BANKERS—IMPERIAL BANK, Lothbury.**  
SECRETARY—C. CLARKE, Esq.

**OFFICES.—12, ABCHURCH LANE, LOMBARD STREET.**

The McHenry Mine is situated in the Blue Ledge district, of the Wahsatch Mountains, in the Territory of Utah, U.S., and is distant about 34 miles from Salt Lake City, and about 25 miles from Echo Station, on the Union Pacific Railroad.

The claim is 1500 feet in length, and is located under the recent Act of Congress. The title has been thoroughly investigated, and is pronounced perfect in every respect.

The mine is considered as, perhaps, the most remarkable in the Territory, both from the richness of the lode and its enormous indications. The outcrop, or extremity exposed to view, is almost unparalleled, and, as may be seen from the reports of the engineers, it exceeds 200 feet in length by 75 feet in depth. It has been bored and proved in various points, showing an amount of ore estimated at over 10,000 tons in the outcrop alone. In addition to this a tunnel has been driven, intersecting a lode itself at a depth of 150 feet from the highest point of the outcrop, and shafts have been further sunk to an additional depth of 115 feet, with levels proving the lode at that depth to be of magnificent ore.

The lode, as will be seen by the report, lies between the foot-wall of syenitic country rock, and a hanging-wall of grey porphyry, thus distinguishing it from the usual class of deposits found in the limestone in Utah.

The certificates of assay of the ore show values in silver ranging up to over \$1000 per ton, with an average of about \$300 per ton. The ore is a free milling one, requiring no roasting, as it contains no base or rebellious metals. Arrangements have been made for the sale to this company of a first-class 20-stamp mill, towards the purchase of which the unappropriated shares of the company have been reserved.

The reports from the well-known engineers, Professor Clayton and Mr. W. Gardner are referred to, and can be obtained at the offices of the company. These have been specially sent for from England, in order to test the statements made by the vendors and their engineers.

The vendors, who themselves purchased the property for a very large sum of money before it was developed, receive now in payment 3400 preference shares and 21,600 ordinary shares. They thus show their belief in the undertaking by consenting to receive payment entirely in shares, unless at the option of the directors, in conformity with the contract, cash should be handed them in exchange for some of the preference shares at par.

But, as the amount required to participate in profits till dividends at the rate of 25 per cent. per annum in each year shall have been paid on the preference shares, but they become identical with those shares as soon as the full amount of principal money credited as paid up on such preference shares shall have been paid thereon as dividend or bonus.

The preference capital has thus, until 100 per cent. has in the aggregate been paid upon it as dividend or bonus, a first charge on all profits to the extent of £15,000 a-year, or 25 per cent. on the entire amount. In addition to this, the profits beyond this sum will until such 100 per cent. shall have been paid, as above, be distributed equally on the whole share capital. Thus, if the ordinary shares receive 10 per cent. per annum, the preference capital will receive 35 per cent. per annum, and so on.

The following estimates are given by the vendors as to the produce of the mine, with one mill of 20 stamps, taking the low average of \$50 per ton as the net produce of the ore:—

30 tons per diem, at \$50..... \$ 1,500  
Or, for 300 working days, \$1500 by 300..... 450,000

Or—say, £55,000 per annum.

But, as the amount required to provide the 25 per cent. on the whole preference capital is only £15,000 a year, there would remain, after making an ample reserve fund, an additional dividend of at least 20 per cent., or together 45 per cent. per annum.

Even a large reduction on this estimate would, therefore, produce a highly satisfactory result. But if the assay average as above of \$300 to the ton were taken, or (say) net \$275, instead of the lowest estimate of \$50 per ton, the results obtained would be enormous, and it must be remembered that, notwithstanding the numerous ill-judged investments that have been made in American mines by Englishmen, there are many in various parts of the Western States which have returned gigantic profits, notably those on the Comstock lode, which have yielded already in dividends twenty millions sterling.

The following contracts have been entered into by or on behalf of the company:—

An agreement dated 25th November, 1873, between Samuel Ten Eyck, James Kennedy Whitaker, and Colonel H. T. Templeton of the first part, and John Simcoe Berghelm of the second part, and William Wilson of the third part.

An agreement dated the 27th February, 1874, between the company of the one part, and John Simcoe Berghelm of the other part.

An agreement dated 19th March, 1874, between the company of the first part, and Homer Brownson Hawkins, as agent, and on behalf of Samuel Ten Eyck, James Kennedy Whitaker, and H. T. Templeton of the fourth part.

The original reports, the certificates of assays, and Memorandum and Articles of Association, together with the above contracts, may be seen at the offices of the company.

Prospectuses and forms of application may be had at the offices of the company.

**WHERE NO ALLOTMENT IS MADE, THE DEPOSIT WILL BE RETURNED IN FULL.**

**RAILWAY CARRIAGE COMPANY (LIMITED).—**  
ESTABLISHED 1847.

OLDBURY WORKS, NEAR BIRMINGHAM.  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, and EVERY DESCRIPTION OF IRONWORK.

Passenger carriages and wagons built, either for cash or for payment, over a period of years.

RAILWAY WAGONS FOR HIRE.  
CHIEF OFFICES.—OLDBURY WORKS, NEAR BIRMINGHAM.

LONDON OFFICES.—7, GREAT WINCHESTER STREET BUILDINGS.

**THE BIRMINGHAM WAGON COMPANY (LIMITED)**

MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for HIRE and SALE, by immediate or deferred payments. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.

EDMUND FOWLER, Sec.  
WAGON WORKS.—SMETHWICK, BIRMINGHAM.

\* \* \* Loans received on Debenture; particulars on application.

**MESSRS. WATSON BROTHERS** return their most sincere

thanks for the great patronage bestowed and confidence reposed in their firm for upwards of 30 years, and to assure their friends and clients it will be their earnest endeavour to merit a continuance of both.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and, from the lengthened experience of Messrs. WATSON BROTHERS, they are emboldened to offer, thus publicly, their best services to all connected with the mining interest.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

**COLLIERIES, IRONWORKS, &c.**

Among the great complaints of metallic miners of late, has been the high prices of Coal and Iron; thus while dividends in Copper and Tin Mines have been gradually declining, many Collieries and Ironworks have been paying 20, 30, and even 60 per cent.; and in consequence of this, Messrs. WATSON BROTHERS have had several enquiries from clients for prices and particulars of the best investments in both classes, and they are collecting information which they hope to publish from time to time, and will be glad if Secretaries and Managers will furnish them with the same kind of information that Pursuers and Secretaries of Metallic Mines have so freely done during the last 30 years. In the meantime they will be ready to deal, at Market prices, in any or all of them.

**Registration of New Companies.**

The following joint-stock companies have been duly registered:—

**RANSIGILL MINING COMPANY (Limited).—Capital 25,000l.**—To take over mining property in Yorkshire. The subscribers (who take one share each) are—F. T. Laurence, Brook House, Clapham Common; G. Carmichael, New Beekenhams; E. J. Armstrong, St. Michael's Buildings; G. Van Heythysingh, Gloucester-place, Hyde Park; J. R. Leaver, 16, Water-lane; J. Cart, Webster-road, Brompton; W. A. McDonald, Branch-road.

**TYBO CONSOLIDATED MINING COMPANY (Limited).—Capital 250,000l.**—To acquire mineral properties in the Tybo mining district, Nye County, Nevada. The subscribers (who take one share each) are—M. C. Fisher, 58, Threadneedle-street; J. M. English, Gresham House; D. Parry, 47, Threadneedle-street; H. Schultz, 47, Mark-lane; G. Broom, Coleman-street; W. Pearson, Woodford; E. T. Gregory, Gresham House.

**PHOSPHOR BRONZE COMPANY (Limited).—Capital 150,000l.**—To take over the business of the Phosphor Bronze Company (Limited). The subscribers (who take one share each) are—G. J. Wolsley, Fleming's House, Half Moon-street, N.; J. Rock, Donon, Sussex; P. J. G. Roquette, Cranley-square; J. W. Bushby, Halken-street; G. A. Disdolf, 110, Cannon-street; E. P. Lotherby; H. S. Roquette, Cragby-square.

**TORR MILLS COTTON SPINNING COMPANY (Limited).—Capital 20,000l.**—To acquire the Torr Mills, Derbyshire. The subscribers (who take one share each) are—J. Arnold, New Mills; W. Hollisworth, New Mills; J. Bayshaw, New Mills; E. Coward, New Mills; S. Low, New Mills; G. Thornley, New Mills; F. W. Hill, New Mills; James Hill, New Mills.

**ANTROQUIA FRONTINO COMPANY (Limited).—Capital 32,500l.**—To acquire mines, &c., in the canton of Antroquia, New Granada. The subscribers (who take one share each) are—W. Baxter, Belsize Park-gardens; G. Voakes, West Moulsey; J. T. Richardson, Gloucester-road; E. E. Gough, Sandringham-road; Hackney; F. G. Hawkins, Bartholomew Villa, Kenton-terrace, Harrow-road, W.

**NORTH OF ENGLAND PAPER MANUFACTURING COMPANY (Limited).—Capital 50,000l.**—To carry on business as paper manufacturers at Higher Mills, Staley Bridge. The subscribers (who take one share each) are—E. H. Harris, Oldham; J. Fenton, Oldham; W. Wrigley, Oldham; R. W. Oldham; J. McAllister, Moss Side, Manchester; W. Booth, Old Trafford; and J. Bonsor, Higher Broughton.

**PLAS KYNASTON TUBE COMPANY (Limited).—Capital 50,000l.**—To purchase a tube manufacturing business at Acrefield, Kynaston, near Birmingham. The subscribers are—A. R. Bones, Ruabon, 25; Alfred Ellwell, Wednesbury, 44; W. P. Roberts, Clement's-lane, 30; D. Thomson, Ruabon, 250; G. Thomson, Ruabon, 4; and M. J. Smith, Ruabon, 5.

**EQUITABLE LOAN COMPANY.**—Registered under the Act 7 and 8, Vic. c. 110, and re-registered under the Joint-Stock Companies Act of 1856, as incorporated as a limited company.

**DEAN ROYAL MILL COMPANY (Limited).—Capital 20,000l.**—To carry on a cotton spinning business. The subscribers (who take one share each) are—A. Pilling, Walsden, near Todmorden; J. R. Pilling, Walsden; J. Pilling, Walsden; W. Pilling, Manchester; J. H. Pilling, Walsden; M. Pilling, Walsden; and J. Howarth, Burnley.

**TORRAB AND DART PAINT COMPANY (Limited).—Capital 25,000l.**—To take over Wolston's Torraby Iron Paint Works, near Birmingham.

**THE WELSH FLANNEL MANUFACTURING COMPANY (Limited).—Capital 30,000l.**—In 10l. shares.

**METROPOLITAN CO-OPERATIVE COAL AND SALT SUPPLY COMPANY (Limited).—Capital 30,000l.**—In 1l. shares.

**SPONTANEOUS COMBUSTION FROM THE USE OF OILS.**—For some months past Messrs. Chas. Price and Co., the proprietors of the Plas Rangoon Engine Oil, have been exerting themselves to induce the Committee of the Northern Fire Offices to vary the classification of oils by which the rate of insurance is fixed, and which they show is unfairly prejudicial to the use of the oils on which they are interested.

They show that the igniting or flashing point of an oil is no test or measure of its capability to engender heat when combined with cotton waste, or other materials; they remark that Mr. J. Galletly performed a series of experiments, with the view of giving greater precision to our knowledge of the kindling of cotton, and other open combustible materials, which happen to have imbibed animal or vegetable oils, and explain that it was practically demonstrated that certain vegetable and animal oils were dangerous, on account of the facility with which they set up spontaneous combustion, while the hydrocarbons were free from this grave defect, and were also capable of exercising a counteracting influence when mixed with oils otherwise dangerous. It appears that Mr. Keates, the consulting chemist to the Metropolitan Board of Works, has also carried out a series of experiments on the subject, and the results thus obtained have substantially agreed with those arrived at by Mr. J. Galletly.

Messrs. Price and Co. contend that if oils were classified for fire insurance purposes according to data obtained by actual experiment olive oil would necessarily be rejected from the higher class and placed in the lower as one of the most dangerous oils, while mineral oils and their compounds would be taken from the lower class and placed in the higher. At the present time, as they point out, the fire offices pay no regard to the description of oil used for lubricating purposes, nor for any purpose whatever, except in the making up of woollen fabrics. In that case there is a classification of oils so as to provide for a varying rate of insurance, according to the description of the oil used. Unfortunately the classification adopted is erroneous, and instead of diminishing the risk of spontaneous combustion, actually tends to increase it. The letter which Messrs. Price and Co. have addressed to the Committee of Northern Fire Offices shows the peril of this state of things, and suggests a remedy. The fact that the rate of insurance with regard to cotton mills has gone up as much as 100 or 150 per cent. within the last few years affords some indication of the extent which fires of a certain kind are found to increase. The argument that the fire offices are able to protect themselves by raising the rates of insurance is obviously, to a great extent, independent of the interests of the public, and, when such a practice is carried beyond a certain point it cannot fail to injure the offices themselves, by restricting the practice of insurance on account of its costliness.

**EXPERIMENTS IN EXPLOSIVES.**—On Saturday the Select Committee on Explosive Substances (the same which has arranged for the meeting of Parliament after the recess the interesting spectacle of a member of the outside public in custody at the bar of the House of Commons) had the opportunity afforded it of observing in action one of the principal agencies which comes within its consideration in the committee-room. The opportunity was provided by the British Dynamite Company, and the scene of the experiments was the park of Sir Gilbert East, about 4 miles beyond Maidenhead.

Amongst the members of the Select Committee who had accepted the invitation were Mr. Vivian, M.P., Mr. Stevenson, M.P., and Mr. Whitwell, M.P. Major Majendie, the Government Inspector of gunpowder works and magazines, was present; so were also Mr. Bonham-Carter, late Chairman of Committee in the House of Commons; Major Ford, Colonel Barnard, Mr. J. Downie, manager of the British Dynamite Company; Mr. Noble, the inventor of dynamite; Mr. J. Thorne, Mr. Russel Gole, Mr. G. Thorne, and Captain Cameron, R.A.

The appointment on the motion of the honourable secretary of the Select Committee arose upon the urgent representations made to the Government of the inconveniences under which mine and quarry owners, and all who use explosive substances, labour in the matter of restrictions placed upon the transit of the material. It is claimed for dynamite that these restrictions are absurdly excessive, and it was towards testing this belief that the experiments of Saturday were chiefly directed. Sir Gilbert East has, or rather had, in his park a couple of Scotch firs of trees, and it was upon these that the principal experiments were tried. Out of a small leather bag, which the company were concerned to contain a light brown earthy substance. This was the terrible dynamite, the "glut powder," as the Americans call it. Standing upon the roots of the tree, Mr. Downie proceeded with easy confidence to demonstrate that dynamite was a pleasant thing rather than otherwise to carry about with him in a leather bag on railway journeys. The theory upon which legislation has hitherto proceeded was that supposing an accident were to befall a train carrying a few hundred pounds of dynamite, the passengers, and the nearest railway station by the distributed promiscuously through space, consequent upon the explosion by the dynamite. It is, on the contrary, alleged that dynamite will not explode except in two ways—one being by concussion between iron and iron, and the other by the detonation of a cap. In proof of this Mr. Downie, taking out a cartridge and laying it on the stump of the tree, swung a sledge hammer round his head and prepared to strike. "It will just smash up like a bit of paste," he said, "and then it will be all over."

There was an uneasy feeling prevalent among the little group of honourable members and others standing round the stump that this was a very safe assertion to make. Supposing the innocent looking roll of paper passed collapsed under the blow of the hammer Mr. Downie would have been justified in supposing, on the other hand, the test failed, and the dynamite exploded. But supposing, on the other hand, the test failed, and the dynamite exploded, it would be equally safe from contradiction by any who stood around the tree. The prediction was, however, happily fulfilled. The hammer fell heavily on the cartridge and flattened it into the appearance of a cake. Other cartridges were



When all the holes are bored to a depth of from 250 to 300 ft., the machines, pumps, &c., are removed to the other shaft to bore the holes in it. During the boring in one shaft the rock is blasted and removed in the other. There is always time to spare, as 300 ft. of holes can be drilled much faster than the shaft can be sunk through the same distance in rock. The diameter of the holes is in all cases 1½ in. On the completion of the holes they are filled to the top with sand, and the blasting and removing the rock begin. The operation of blasting is thus conducted:—The miner, by the means of a small pump, such as is used with ordinary boring rods, removes the sand from the holes to a depth of from 2 to 3 ft.; clay is then forced into each hole, so as to make a plug from 6 in. to 1 ft. long, and on the



top of this a cartridge of duolin is placed, and the holes are then tamped with clay. The cartridges are connected together by wires leading to a galvanic battery, and they are all fired at once. The explosion is produced by a cap filled with fulminate of mercury. The result of the simultaneous discharge of these nine holes is the formation of a large cavity in the centre of the shaft to the depth of the bottom of the cartridges. The rock loosened by the operation is removed, and the remaining holes are then charged, and fired in the same way, those on each side together, but only one side at a time.

It should be noted here that powder is not effective in vertical holes. Duolin, dynamite, or some other of the nitroglycerine compounds must be used, particularly where the strata are nearly vertical and, to a certain extent, fissured. The sides of the shaft preserve their proper form, and no hand-blasting is necessary for trimming them up. When all the holes around the shaft have been fired the miner begins again with the nine central holes, and the work goes on in this manner until the depth to which the holes have been bored is reached; the machines are then set to work again, and the holes are bored from 250 to 300 ft. deeper.

The holes in that part of the shaft which had been sunk preserved their vertical direction until they reached a small vein of coal, where, although remaining in the vertical plane at right angles to the strike, they were deflected towards the floor of the veins, the angle of deflection being about 2°. This deflection is due to the fact that when the drill reached the top of the vein, which dipped at an angle of about 60°, and was softer than the rock, it inclined towards the side offering the least resistance. Thus far the deflection has been so slight that it was only necessary after the nine central holes had been fired to put a larger charge of duolin in the holes on the side than in the vertical holes, and a smaller charge in the holes on the side. In the first case the duolin shattered the rock behind it, and it was possible to keep that side of the shaft vertical without resorting much to hand-blasting. In all other parts of the shaft the holes went down in a perfectly vertical direction. The corners of the shaft are exactly where the four corner holes went down, and the sides of the shaft look as if they had been trimmed up, although in reality nothing of the kind has been done.

#### PRINCE PATRICK SPECIAL REPORT.

May 25.—The weather having proved so favourable for some time, we made effort to modify the bottom part of Campbell's engine shaft, and have set a lift of pumps in for sinking, which is now completed, and sinking will be commenced forthwith to intersect Exton's course of ore; also the 160, west of ditto shaft, is all but made ready to be driven in a fine productive lode. The 140, driving west of ditto, is fast improving in value for lead, and now yields good dressing stuff. The slope above this level is worth 2 tons of ore per fathom, and looks well for further improvement in value of mineral. The 100 shaft west, driving upon the great lode, is still continuing as rich as ever, and worth 4 tons per fathom, leaving rich backs, bottoms, and sides to increase our reserves. The north slope on the said lode is also equally valuable, and worth 3½ to 4 tons of lead per fathom. The 100, driving north, has just intersected a branch vein, with a rib of solid lead, which I believe is a tributary to a new east and west lode that I opine stands north, and runs along the length of the set. The new vein east, sinking from the 100 to ventilate the 120, has dropped upon the bearing formation, and is returning ore to the value of the cost already.

Fairbrough Shaft: It is now evident that we have discovered quite a new productive east and west master lode in this small trial; the depth is only 6 fms. from surface, and we have raised already 3 tons of prime lead ore therefrom, and the vein is improving in strength and value every foot we sink.

Rule Shaft: In sinking below the so we have discovered upon a fine flat lode, corresponding in nature and quality of lead to the Parry's flat. Drivings will now be made upon it, and there is abundance of virgin ground before us, so we may expect great results before long. The mine all through is in excellent working order, and our monthly returns as well as our reserves are on the increase.—JOHN LLOYD.

#### WEST BRYN CELYN SPECIAL REPORT.

May 23.—As you desired, I went down and inspected the whole of this lead mine in company with your agent yesterday, and the following are my views on the same:—1. Haye's Shaft: Two men are employed here to drive east from the bottom of the shaft, and a rib of ore, ½ in. wide, with other strings of lead mixed through the stone, follow on. The indications are encouraging, but the vein is rather close yet. 2. Alexander Shaft: Four men are cross-cutting at the 60 to cut Simon's lode, and by the indication of the forebore to-day the object is reached, and a few fathoms of driving west will prove it to satisfaction. Also at the 40 three men are set to drive east upon the south vein. The influence of the cross-course has made the lode barren in this place, but it is well to prove it a little further, and in different measures. 3. North Shaft: Four men are employed to drive east at 25, as well as west on Simon's lode; both ends look healthy, with ribs of ore, about 2 in. wide, leading downwards. 4. Adit Level: Six men are set to drive this level west upon Bryn Celyn lode; a fine regular lead ore wall is newly met with, having carbonate of lime, and yellow clay overlying it, and water oozing out freely, which is a promising indication that better and ore ground is ahead. I have no doubt that an improvement will take place in this end very soon; I think well of this trial. 5. The rise from the adit level to unwater the Draw-well shaft: four men are employed in this work, and they are now high enough to cross-cut for that object, and which they have commenced to do. There are two advantages to look for in this piece of work—that is, there are branches or tributaries to the Bryn Celyn vein, which it will intersect and prove the value of, and the ventilation will be improved when this rise is holed through, especially for driving the adit west, which is the most important trial in the mine upon the east and west lodes. I should recommend that this drift be made as near the north-west line as possible, in order to save time, money, and length. On the whole, I was much pleased with the prospects of the mine, and found all parts in excellent working order, but I would strongly advise you, now that the weather is favourable, to get a portable engine and pumps; have them set forthwith in the shaft, which is deep enough, and drive under the course of ore known to exist at Hepwood shaft, and which was lost by the old company. This being done, you would have the mine in a dividend-paying state at once, without having to incur any extra labour cost, as suspending the western portions of your mine for a time would be no loss to you in any shape.—JOHN LLOYD.

**BORING BY MACHINERY.**—An impression generally prevails in Cornwall among mining adventurers that the boring machine has never yet had a fair trial, and that inasmuch as mining in Cornwall must necessarily in future be carried on in a more economical manner—or it will not be carried on at all—it behooves all those in authority to give the matter of expenses their most serious consideration. The following particulars, setting forth what can be done by the boring machine, cannot fail to read with interest.

Cost of shaft by hand and during a fortnight:—	
Sinkers, twelve, 12 days each, at 5s. 6d.	£39 12 0
Water filters, three, 12 days each, at 3s. 6d.	6 0 0
Blasting powder	1 2 0
Total cost by hand	£47 0 0
Depth sunk 3 yards—cost per yard by hand	15 13 4
Cost of shaft by machine during a fortnight:—	
Sinkers, three, 12 days each, at 5s. 9d.	£10 7 0
Laborers, six, 12 days each, at 3s. 6d.	12 12 0
Engine, two, 12 days each, at 2s. 6d.	3 0 0
Dynamite, 60 lbs. at 2s.	3 0 0
Electric fuses (Brain's) 20 per day, at (say) 6d. each	6 0 0
Coal for air-compressing engine, 12 tons small at 10s.	6 0 0
Oil for engines	0 5 0
Total	£34 4 0
Depth sunk, 5 yards—cost per yard	8 16 9

So here there is a saving of nearly 50 per cent. We feel assured that a thorough and impartial trial of the boring machine is necessary to satisfy adventurers in Cornish mines that all is being done that ought to be.

**IRON ORE OVER THE CORNWALL MINERALS RAILWAY.**—Large quantities of iron ore are being transported over the Cornwall Minerals Railway from the iron mines at Culbert to the wharves at Par. Probably 100 tons are carried over every night. This ore is not conveyed by daytime, but between 6.30 p.m. and 8 a.m., and no trains traverse the line during the day. Already 500 men are employed in breaking the iron ore to be carried over the railway. A line of railway is also being constructed from Tremlow to Gravel Hill. It will be observed by a notice in our advertising columns that the line between the wharves and Par at Povey and Newquay will be opened for goods and minerals traffic on June 1.

**CORNISH MINER SHARE MARKET.**—In consequence of the Whitsuntide holidays but little business has been done in the share market during the week. The London tin and copper markets have also remained in *stagnation* up to within the past day or so, when, business being resumed, all tin stock is in very strong demand at advancing prices. South Dolcoath shares have attracted a little attention in consequence of the discovery of a good lode in the 10 ft. level east, and shares have advanced to 5½. The following are the closing prices:—Carn Brea improved to 62½, 65. Cook's Kitchens remain at 9½ to 10½. Dolcoaths are in good enquiry, and have advanced to 47½, 48½. East Pool, ½ to 10, and in stronger demand. East Lovell, 11½ to 12½. Rosewell Hills in better demand at 7½, 8 to 10. South Carn Brea, 3 to 3½. Rosewell Condor, 3½ to 4. South Crofters not much dealt in at 17 to 19. South Frances called 12 to 13. South Dolcoaths, in consequence of the improved appearance of the mine, have advanced to 5, 6. 84 Ives Consols, 11 to 12. South Caradon, 60 to 62½. Tincofts in good demand at 30 to 31. West Bassett moderately dealt in at 10 to 11. Wheel Owles, 125 to 130. West Chiverton called 23 to 25, but no business done in the Cornish market. West Frances in strong request at 13 to 14. West Seton, 29 to 31, but no transactions reported. West Tolgus, after declining to 53, 54, close slightly weaker at 48 to 50; we hear good reports of this. In Wheel Bassett, 25 to 30. Wheel Kitty (St. Agnes), 8 to 9. Wheel Ury, 2½ to 2½. West Briton.

**COAL IN SUSSEX.**—Mr. Henry Willett, hon. secretary of the Sub-Walton Exploration, writes that a depth of 887 ft. has been attained—the progress lately having been over 10 feet per working day. The present contract with the Diamond Boring Company to sink 1000 feet will, at this rate, be completed by the end of next week, but the want of funds makes Mr. Willett far from sanguine that anything further will be attempted, although the unexpectedly deep Kimmeridge clay has not been pierced.

### SUBSCRIPTION FOR £87,000 DEFERRED STOCK OF THE BRISTOL PORT AND CHANNEL DOCK COMPANY.

Incorporated by Special Act of Parliament, 27 and 28 Vic., cap. cexli.

Price of Issue, par—viz., £100 per £100 Stock.

Interest at 7 per cent. per annum upon each £100 stock is guaranteed to subscribers for three years—viz., up to the 1st June, 1877 (being 2½ years after the date appointed for the completion and opening of the Docks), affording ample time for the development of the undertaking.

The due and punctual payment of such interest is absolutely secured for the whole of the above-mentioned period, by an investment of £19,000 Consols (Three per Cent. Annuities) for that purpose, now standing in the names of Sir DANIEL GOOCH, Bart., M.P., Chairman of the Great Western Railway Company.

EDWARD SHIPLEY ELLIS, Esq., Chairman of the Midland Railway Company.

Who have consented to act as trustees for the same.

#### DIRECTORS.

PHILIP W. S. MILES, Esq., Bristol.—CHAIRMAN.

CHARLES NASH, Esq. (Messrs. Jones and Nash), Bristol.—VICE-CHAIRMAN.

WILLIAM MONTAGU BAILLIE, Esq. (Messrs. Cave, Baillie & Co.), Bristol.

HEW DALRYMPLE, Esq., Clifton.

HENRY HURRY GOODEVE, Esq., Bristol.

WILLIAM SMITH, Esq. (Messrs. William Smith & Co.), Bristol.

FRANCIS TAGART, Esq. (Messrs. Tagart, Boyson, & Slee), London.

THOMAS TERRETT TAYLOR, Esq., Bristol.

CHRISTOPHER JAMES THOMAS, Esq. (Messrs. C. Thomas and Brothers), Bristol.

MARK WHITWILL, Esq. (Messrs. Mark Whitwell & Son), Bristol.

WILLIAM HENRY WILLS, Esq. (Messrs. W. D. & H. O. Wills and Sons), Bristol and London.

#### BANKERS.

Messrs. BARNETTS, HOARES, HANBURY, and LLOYD, 60, Lombard Street, London.

Sir WILLIAM MILES, Bart., and Co., Bristol.

Messrs. BRUNLES and MCKERROW, Westminster.

Messrs. OSBORNE, WARD, VASSALL, and Co., Bristol.

#### SECRETARY.

H. E. PENNY, Esq.

#### OFFICES.

ROYAL INSURANCE BUILDINGS, BRISTOL.

#### BROKERS.

Messrs. HUGGINS and Co., 1, Threadneedle Street, E.C., London.

### THE BRISTOL PORT AND CHANNEL DOCK COMPANY

is incorporated by Special Act of Parliament for the purpose of providing for the Port of Bristol additional Docks, suitable for ocean-going steamers and other ships of large tonnage.

Applications are invited for £87,000, part of £147,500 deferred stock of the company, which stock is entitled to the whole of the earnings after 6 per cent. per annum has been paid to the holders of the preferred stock.

The price of the stock now offered is £100 for each £100 stock, and payment is to be made as follows:—

£100	on allotment.
20	on 15th July, 1874.
25	on 15th August, 1874.
25	on 15th September, 1874.

Interest at the rate of 7 per cent. will accrue on each instalment from the date of payment, but the privilege is reserved to subscribers to pay up on allotment the whole amount payable for the stock, thus entitling them to interest at 7 per cent. on the full £100 stock.

The Docks, whose property extends to about 90 acres freehold, are situated at the mouth of the River Avon, with direct access from the Severn and the Bristol Channel, and will be easily and safely approached at all seasons, in all weathers, and at almost any state of the tide, by steamers and ships of the largest class, for whose accommodation they are specially adapted.

Bristol, as is well known, was the birth-place of Transatlantic steam navigation, its geographical position offering advantages for an ocean steam trade unequalled by those of any other port, on account of the facility of reaching it in a direct line from the Atlantic, free from the dangers of the English and St. George's Channels.

It has been hitherto impossible to turn these natural advantages to full account, in consequence of the difficulty of reaching the old docks, which can only be approached through the tortuous and dangerous channel of the River Avon, from whose mouth they are about six miles distant.

This difficulty has been found to operate so prejudicially as to render it an absolute necessity to construct docks suitable for vessels of large tonnage in a situation more easy of access, and so as to allow the natural capabilities of the port to be duly utilised.

Notwithstanding the great disadvantages under which the trade of Bristol suffers from the want of accommodation for large ships and steamers, the sea-going tonnage has rapidly increased as follows:—

In 1852 the foreign import tonnage was	132,272 Tons
" 1857 "	262,327 "
" 1872 "	374,188 "
being an increase of nearly 40,000 tons over the previous year.	411,014 "

The progress of the grain trade at Bristol has during the same period been still more striking, having advanced from 16,038 tons in 1852 to 134,508 tons in 1872, or an increase of nearly nine times.

The tonnage of coasting and other vessels from Ireland, &c., amounted, for the year 1873, to about 550,000 tons.

Coal being probably the most important item in the steam shipping trade, the Bristol Port and Channel Docks, from their close proximity to the Welsh coal ports, will effect for steamers and convenience in the export and import of goods.

The central position of Bristol offers to the Post Office one of the best points for the collection and distribution of that portion of the foreign correspondence of the country which is conveyed by ocean-going steamers.

In view of the early completion of these docks, arrangements are already in progress having for object the making of Bristol the port of arrival and departure for lines of ocean steamers trading with Australia, America, and Canada.

A careful and practical estimate of the revenue to be realised by the proposed docks, shows a net revenue, after deducting all charges and the expenses of working, and also making provision for repairs and maintenance, of £32,250 per annum, which estimate may be taken as not only reliable, but moderate.

The capital of the company is £235,000 (with the usual borrowing powers), divided into £147,500 preferred stock, limited to 6 per cent. dividend, and £147,500 deferred stock, entitled to the whole of the surplus earnings.

The deferred stock being entitled to all the earnings of the undertaking after payment of the dividend interest, and 6 per cent. on the preferred stock, and the whole amount required to meet the same being only £13,785 per annum, it will be seen that on the basis of the estimated income there would remain £18,465 per annum available as dividend on the deferred share capital (part of which is now for subscription), equal to 12 per cent. per annum thereon.

This unusually advantageous return to the holders of the deferred stock arises from the fact that the dividend on the preferred half of the capital is limited strictly to 6 per cent. per annum, while the estimated return on the entire capital is about 9 per cent. It follows, therefore, that the deferred half of the capital will not only be entitled to its own proportion of the estimated earnings, but also the proportion over and above 6 per cent. arising out of the preferred half of the capital, bringing up the total estimated return on the deferred stock to 12 per cent. per annum, as already referred to.

By the terms of the contract for the construction of the Docks, they are to be completed by the end of the present year. Upwards of £200,000 have already been expended upon them, and active progress is now being made for providing for their being finished within that period.

With a view of ensuring to the subscribers of the stock now offered, the due and punctual payment of interest from the time of subscription, £19,000 Consols (3 per cent. annuities) have been placed in the names of Sir Daniel Gooch, Bart., M.P., Chairman of the Great Western Railway Company, and Edward Shipley Ellis, Esq., Chairman of the Midland Railway Company, who have consented to act as trustees for the due payment thereof, until 1st June, 1877, being 2½ years after the time fixed for completion of the Docks, a period which will allow ample time for the full development of the business of the undertaking.

This interest will be paid half yearly at the banking houses of Messrs. Barnetts, Hoares, and Co., Lombard-street, London, on 1st June and 1st December, in each year, and the first payment will be made on 1st December next.

Provisional certificates will be issued in exchange for the bankers' receipts, and on completion of the payments the stock will be transferred into the name of each applicant, free of stamp duty or other charges, and the stock certificate of the company will be forwarded in due course.

In the event of no allotment being made to any applicant the deposit paid will be returned forthwith without deductions; should a smaller amount be allotted than applied for, the balance paid on application will be applied towards payment of the amount payable on allotment.

Application for shares on the annexed form, accompanied by a deposit of £10 for

every £100 stock applied for, may be sent to Messrs. BARNETT, HOARES, HANBURY, and LLOYD, 60, Lombard-street, E.C., London; or to Sir W. MILES, Bart., at the company's offices, Royal Insurance Buildings, Bristol; or to Messrs. HUGGINS and Co., brokers, 1, Threadneedle-street, E.C., London, from whom prospectuses and forms of application can be obtained.

### Subscription for £87,000 Deferred Stock of the BRISTOL PORT AND CHANNEL DOCK COMPANY.

Incorporated by Act of Parliament, 27 and 28 Vic., cap. cexli.

#### FORM OF APPLICATION.

(To be retained by the Bankers.)

To the Directors of the Bristol Port and Channel Dock Company.

GENTLEMEN,—Having paid to your credit at your bankers the sum of £ being £10 per cent. on £ Deferred Stock of the Bristol Port and Channel Dock Company, I request you to cause to be transferred to me that amount of stock, and I hereby agree to accept the same, or any less amount that may be transferred to me, and to pay the balance in respect of such stock, according to the terms of the prospectus, dated 29th May, 1874.

Name (in full) \_\_\_\_\_

Address \_\_\_\_\_

Profession (if any) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

I desire to pay up my subscription in full, on allotment, receiving thereon from the date of payment \_\_\_\_\_

Signature \_\_\_\_\_

Addition to be filled up if the applicant wishes to pay up in full, I desire to pay up my subscription in full, on allotment, receiving thereon from the date of payment \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_

Signature \_\_\_\_\_



from the foot of the emb, and during last week the level of the water in the old

the foot of the *level*, and during last week the level of the water in the adit shaft of Buenos Ayres descended 0·46 metres. The distance driven in the adit for the three weeks ending April 25 amounts to 14½.—**Mine of San Antonio de la Ovejuna:** In the upper workings of this mine the ore has improved. In Santa Eulodia the ramification of the rock continues, and the water at the foot of the cut has not ceased; therefore, the advance has been small.

**BENIGNERA.—C. Craze,** May 27: **Victoria Shaft:** The large pump in this shaft got out of order last Tuesday night, and we were obliged to change the piston and plunger; owing to this our sinking in the last week has not been so good; at present the pumps are working pretty well, and the lode presents as strong and healthy appearance as ever, producing about 1 ton of lead to the fathom.—**New Shaft:** There is a little more lead in the level being driven east of this shaft; we put the men at work on it, and the lode continues to show a level vein in a little north from open cast; this will facilitate our stopping the ground far back of said level. There is no change in the level west of this shaft. We have taken the men from the level west of open cast, and put them to drive west of the level driven south of Victoria shaft, to see if the lead-bearing part of the lode we have in this shaft holds up in that direction. The stopes in south-east side of open cast is looking better than it has before for some weeks. The stope in north-east side of open cast is about the same as last reported. We are now taking out the carbonate from the western end of open cast, and I am pleased to say that it looks quite as well as I have ever seen it.

**MENZIEBERG.—R. K. Roskilly,** May 26: **Dickins' Engine Shaft:** In this shaft sinking below the 80, there is no particular change since last reported on. Machinery and slaving working as usual.

**ALAMILLOS.—May 20:** The lode in the 60, west of San Rafael shaft, occasionally produces stones of great size. The 50, west of San Francisco shaft, is still getting on all right; the lode continues to lead strong, and much iron is produced. The ground in the 50 cross-cut, north of La Magdalena shaft, is very hard. The lode in the 85, east of Taylor's engine shaft, is regular, but unproductive. The 85, west of same shaft, is also unproductive. The lode in the 50, east of San Victor shaft, is better defined, and of a more open character than it has been. The 50 cross-cut, south of San Victor shaft, is being driven to meet the cross-cut from San Carlos shaft. The 50 cross-cut, north of San Carlos shaft, passed through a lode containing gold stones of one or two days' size. The lode in the 20, west of Adill's cross-cut, is split into branches of no value. The lode in the 50, east of Judd's engine shaft, is the 70, west of Adill's shaft, is improving. The 50, east of Crosby's shaft, is compact and solid. The lode in the 65, east of Judd's, is small and poor. The 40, east of air shaft, has not yet met with the lode east of the cross-course. The 40, east of air shaft, produces 3 tons of ore per fathom; this has reached the main cross-course, and the men are put to sink a winze in it to ventilate the 40. There is no improvement in the 50, east of Crosby's shaft. The lode in the 50, west of Crosby's cross-cut, is small and compact, yielding ½ ton per fathom. In the 20, west of Swaffield's shaft, the lode is small and poor, and the ground hard. The 30, east of Swaffield's shaft, contains a little lead, but not enough to value. There is a good stone of ore in the bottom of the 20, west of Adill's shaft. Shafts and Winzes:—In Judd's engine shaft, below the 80, the men are still engaged in cutting pitwork. Pedro's winze, sinking below the 75, contains a very promising lode, worth 1½ ton per fathom. Melchior's winze, below the 20, has improved, and now yields 1½ ton of ore per fathom. Julian's winze produces 2 tons of ore per fathom; this winze is situated to the east of Rafael's winze and Magdalena shaft, and is in a very fine lode. Bas's winze, below the 100, is worth 3 tons of ore per fathom; this is being sunk in the present run, east of air shaft.

**FORTUNA.—May 18:** Canada Inez:—In the 110, west of Henry's shaft, the ground is easier, but the lode is small and poor. The lode in the 100 fm. level, west of Judd's shaft, continues in a disordered state, and the ground hard. The ground in the 80 cross-cut, south of Henry's shaft, is harder for diving. The lode in the 50, west of San Pedro shaft, is large, and yields 1 ton per fathom. The lode in the 80, west of Kennedy's, is smaller than it was. The 50, east of San Pedro shaft, is worth ½ ton per fathom. The lode is well-defined, but hard. The lode in the 40, east of San Francisco shaft, is small, yielding ½ ton per fathom. In the 90, east of Lowndes' shaft, the lode is still in disordered ground. The lode in the 90, west of Lowndes' shaft, is small and unproductive. In the 80 cross-cut, east of Laguna's shaft, we have intersected a few small branches of no value; we are still driving north. Manuel's winze, below the 80, produces 3 tons of ore per fathom; a very fine lode, and good progress is being made in sinking.—Los Andios: The lode in the 110, west of San Carlos shaft, is compact and promising, and produces 1 ton of ore per fathom. The 70, west of San Francisco shaft, is compact, and produces 1 ton of ore per fathom. The lode in the 120, east of Morris's shaft, is large, and spotted with lead. The lode in the 110, east of Cox's shaft, is very small, and the ground hard. In the 100 east of San Miguel's shaft, the lode is much reduced in size, and is now of no value. The lode in the 55, west of Palgrave's shaft, is disordered and poor. In consequence of the engine having been idle for the purpose of hanging pitwork, the 45, east and west of Palgrave's, remain as last reported.—Unproductive. The lode in the 25, east of footway shaft, is small, and the ground hard. The lode in the 35, west of Swaffield's shaft, yields 1 ton of ore per fathom. We have commenced to drive the 20, east of Adill's shaft, in a pretty good lode, and the ground is regular. The lode in the 20, east of Adill's shaft, is improving. Good progress is being made in sinking Buenos Amigos shaft below the 110, which is worth 1 ton of ore per fathom. Toledo's winze, below the 100, has fallen off in value since last report, now worth 1 ton per fathom. Adolfo's winze, below the 30, yields 2 tons of ore per fathom. Terrance's winze, below the 110, is improving, now worth 1 ton per fathom. The lode in Conda's winze, below the 35, is compact, yielding 2 tons of ore per fathom. Catalo's winze, below the 75, yields 1 ton of ore per fathom; this is situated east of San Miguel shaft. The lode is well defined.

**LIXARES.—May 20:** The 85, west of Crosby's shaft, is unproductive, and the lode small. The 85, west of Crosby's shaft, on the south lode, yields 1 ton per fathom. The ground in the 75, west of Crosby's shaft, is hard, and the lode small and poor. The lode in the 75, west of San Francisco shaft, is compact, and produces 1½ ton per fathom. In the 75, east of this shaft, the lode is small and poor. The 65, west of same shaft, is worth 1 ton per fathom. The lode in the 55, west of San Francisco shaft, is improving, worth 1 ton per fathom. The east is also worth 1 ton of ore per fathom.—Shafts and Winzes: Good progress being made in sinking Warner's engine shaft below the 85. No. 188 winze, below the 55, yields ½ ton per fathom; the lode is failing in the sink.—Los Quinientos: The lode in the 80, west of Taylor's engine shaft, is small and unproductive. That the 65, west of the same shaft, is strong and open, yielding good stones of ore. The ground in the 55, west of Taylor's shaft, is hard, and the lode in Adell's, is worth 1 ton of ore per fathom. The lode in the 55, east of Taylor's, is poor, so also is the 75, east of Adill's, and the 55, west of San Carlos shaft, are quite unproductive. The 65, west of San Carlos, is worth 1 ton per fathom; the lode continues to improve, but has fallen off in value. The 65, east of San Carlos, has improved during the past week, and now yields ½ ton per fathom. The 55, east of Judd's, is worth 1 ton per fathom. The 45, east of Judd's, is now unproductive. The 32, east of Adill's, is worth 2 tons per fathom; lode compact and solid.—Shafts and Winzes:—In Carlos shaft, sinking below the 65, is being pushed on as fast as possible. The ground in Adill's shaft, sinking below the 65, is very hard. The lode in Adell's, is improving, and is now worth ½ ton per fathom. The lode in Ortega's winze, below the 55, is strong and open, yielding 1 ton per fathom. Pedro's winze is going down in a productive lode below the 32, worth 1 ton of ore per fm.

**LANESTOSA.—May 7:** Asuncion: Judd's shaft, sinking below the metre level, yields ¼ ton of lead and ½ ton of calamine ore per fathom; the lode 6 ft. wide, chiefly made up of semi decomposed dolomite, with veins and pockets of lead and calamine. The cutting of the 60 metre pit is completed, and the men are now getting in skip-road, ladder way, &c., preparatory to commencing the levels. The lode in the adit north of Judd's is trending very much westerly, and is thought it must be a branch from the main lode, whose surface veins are much rather east; in the end the lode is large, consisting of hard dolomite with lead and calamine. The adit level south of Cave level, is trending very much easterly, and the lode is much thinner in the east side, which will be cut through when the it is holed through. The adit south from Cave level winze yields ¼ ton of lead per fathom; this will now be called adit south of Judd's; lode small, and pound hard. The adit north from the north side produces 1 ton of lead ore per fathom; ground much improved, lode 4 ft. wide. The ventilating winze from adit north of Judd's yields ½ ton of lead ore per fathom; lode increased in size, now 2 ft. wide. If the present improvement in the political state of the district continues we shall resume ore raising during the present month, but this being uncertain no estimate can be given for yield of ore.

**CAPE COPPER.—Returns for March:** Yield From Ockiep, 670 tons, 31 per cent.; Spectacle, 38 tons, 29 per cent.; Railway traffic for four weeks ending April 4, 1874, 4,000 tons, up 85½ tons down.—Bills of Lading Received: 1,000 tons of copper by Antonio Vincent; 795 tons of ore and regulus, per steamers Edith of Lorne, Roman, Northam, and Nyanza.—Arrivals at Port Nolloth: The new-old, with outward cargo, and to load about 350 tons of ore.—Sales by Public Auctioning: On April 28, 550 tons of ore, at an average of 15s. 0½d. per unit, realised approximately 12,900 £.—Put Forward for Sale by Public Ticketing: On May 26, 1,000 tons of ore. On June 9, 580 tons of ore.

**WEST CANADA.—April 20:** Huron Copper Bay: The stope in the neck of the 50, west of Palmer's shaft, will yield 4 tons of copper ore per fathom. The stope in the bottom of this level, east of Palmer's shaft, will yield 3 tons per fathom, and the stope in the bottom of the 35, east of Bray's shaft, 2½ tons per fm.

**BRITISH SLATE COMPANY.**—A petition has been presented to the Court of Chancery for the winding-up of the British Slate Company (Limited).

**OLD DRAKE WALLS.**—The winning-up of this mine shows how the Cost book System, if not observed in its integrity, may be abused and inflict injury on innocent parties. In June, 1872, there was a balance owing from the mine amounting to no less than 4283£. In July of same year a call of 1s. per share was made, realising 640£, which was, of course, utterly inadequate to pay off the above liability. In February, 1873, a meeting was held, when it was shown that after long paid for the plant and machinery there was a balance of 2492£ due from the company, and another call of 5s. per share was made. It was then resolved to wind up the mine, but 1½ months afterwards shareholders' liability and nothing more was heard of the concern until within the last few days, when the committee state that their call of 1s. per share is necessary to clear off the remaining liabilities. They declare that this is requisite in consequence of numerous claims—of the existence of which they had no notice—having been made since the call of 5s. was resolved on February, 1873. Whatever may be said against the system of limited liability, applied to mines, there can be no doubt that it would have been a great protection to shareholders in this case.

**LEICESTER-SQUARE.**—The works being now sufficiently advanced to fix the date of their completion—June 15—a memorial is in course of signature by the owners and occupiers of property in Leicester-square and the neighbourhood, including the Defence Committee, asking His Royal Highness the Prince of Wales to preside at the ceremony of dedicating the square to the public use. If His Royal Highness consents to comply with the request the opening will, it is anticipated, be fixed for some day between June 20 and 30 next, and preparations in the way of decorations by the inhabitants are contemplated anticipatory of the opening.

**EXCHAMBER (Gold and Silver).—Sir Frederick Martin Williams**, M.P. for Truro, has joined the board of this company as a director.



## BRITISH MINES.



\_\_\_\_\_



\* With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Mining on the Pacific Coast, No. 111. (J. P. Clough); Emma Mine; Utah Mines; Notes on Taquaril Mine; Blake's Ore Crusher (H. R. Marsden); Pyrites as a Source of Sulphur, Iron, and Copper (C. R. A. Wright); Peat Fuel; Walker's Improvements in Railways and Rolling Stock; Kalsbe (G. H. C. Bartlett, J. Rogers); Questions on Practical Mining (J. H. Clough); Miner's Pay—The Thirteen Months System; Saving of Fine Tin; Rampfide Mining Company; South Roman Gravel Mine; Teconia and Flagstaff Companies; Swansea Valley Steam Collieries Company—The Erie Railway—Eccentric Theodolite—Patent Matters—Meetings of the Javal, Yorke Peninsula, Brazilian Consols, Devon Great Consols, West Canadian, Hingston Down, West Godolphin, and Rio Tinto Mining Companies.

**CHAPEL HOUSE.**—This colliery is working very steadily, and making satisfactory profits. The time for the payment of the second dividend is drawing near, and it will probably be at the same rate as before (15 per cent.), or perhaps higher.

**THE SOUTHERN RAILWAY (Ireland).**—The directors arrived, *via* Milford, in Waterford, on Thursday morning, whence they subsequently proceeded to Clonmel, for the purpose of visiting the works and inspecting the progress of the line between Clonmel and Thurles, and they expressed their intention of visiting Cashel on Friday, and Sliedagh Coal Mines on Saturday, the branch lines to each of which localities they propose to commence as soon as possible. The *Clonmel Chronicle* remarks that they will be able to form a very favourable opinion of the wealth and population of the district which their railway will open up.

**NICHOLAS ENXOR.**—Whatever opinions may be entertained with respect to his views upon geological questions, we are satisfied that there is not a reader of the *Mining Journal* but will regret that we shall no longer be able to number him amongst our correspondents. He died at his estate, St. Teath, Cornwall, on Saturday last, in his seventy-seventh year. We cannot turn to a volume of the *Journal* during the last quarter of a century without finding communications from Mr. Enxor upon subjects of paramount interest to practical miners. That his conclusions were at all times accurate we will not attempt to maintain, but it may be said without any hesitation that he has conferred a permanent benefit upon the mining community by recording so vast a mass of facts and observations. That one whose views upon geology were often extremely original (though his most imaginative notions would compare favourably with those of a member of the Geological Survey, who has just taken it into his head to exclude, and attempt to justify the exclusion of, coal from the mineral kingdom) should have had energetic opponents is not a matter for surprise; but that his theories were not groundless may be judged of from the circumstance that there are now a vast number of practical men who have become converts to his opinions. He was unquestionably most labourious in research, as well as an acute observer during an extended period of years of practical experience.

#### SOUTH TREBURGETT SILVER-LEAD MINING COMPANY (LIMITED).

**WANTED IMMEDIATELY, A GOOD SECONDHAND ROTARY STEAM ENGINE,** to both pump and wind; also, a suitable boiler. Address, P. R. Wilson, Esq., 20, St. Helen's place, Bishopsgate, London, E.C.

#### TO FINANCIAL AGENTS.

**WANTED, the ASSISTANCE of an AGENT, or AGENTS, TO PLACE AWAY the SHARES of a GOOD TIN MINE in CORN WALL.** No promotion money nor premium required. The whole amount raised about £5000 to be applied to the erection of machinery, to return its produce, which is considerable. A liberal commission allowed to an energetic person. For further particulars, apply to "Miner," *Mining Journal* Office, 26, Fleet street, London.

**WANTED, by an experienced person, a SITUATION as MINE MANAGER.** Would not object to go abroad. Satisfactory references given and accepted. Address, "T. P.," *Mining Journal* Office, 26, Fleet street, London.

**WANTED, a SITUATION, at HOME or ABROAD, as COLLIERY MANAGER, or in any other way connected with MINING, by a Young Man (23), who has had considerable experience, and can produce satisfactory testimonials of his ability to undertake the management of extensive mining operations, keep up plans, &c.** Address, "M. Manager," *Mining Journal* Office, 26, Fleet street, London.

**THE ADVERTISER (24), a Student at the Royal School of Mines, desires a SITUATION as ASSISTANT to a COLLIERY MANAGER or MINING ENGINEER, or a similar appointment.** Is a good Analyst, and has a good knowledge of principles of Mining, Metallurgy, Mechanics, &c. Has been several years in an office of a large Ironworks. Address, "A. H.," *Mining Journal* Office, 26, Fleet street, London.

**A GENTLEMAN, with a lengthened practical experience in Mining and Mineral Estate Agency Business, is OPEN to an ENGAGEMENT, with a view to PARTNERSHIP in a business already established or otherwise.** Address, "M. E.," care of Davies and Co., Advertising Agents, 1, Finch-lane, Cornhill, London.

**EIGHT PER CENT. PER ANNUM OFFERED UPON FIRST CLASS LAND MORTGAGE SECURITY.** For prospectuses, and other information, apply to W. GUNBY, 2, Ashwood-terrace, Headingley, Leeds.

#### TO IRONMASTERS.

**FOR SALE, an IRON MINE of PROVED VALUE;** close to rail, and near a shipping port. Invaluable to a gentleman desirous of raising one with a view of utilising it. Address, "J. M.," *Mining Journal* Office, 26, Fleet street, London.

**CORNISH PUMPING ENGINE, 80 in. or upwards, WANTED FOR FLINTSHIRE, with BOILERS, complete preferred.** Replies must state price and every particular. Address, "Engine," *Mining Journal* Office, 26, Fleet street, London.

#### LEAD ORES.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
May 25	Lisburne—E. Logylass	18	£12 15 0	Panther Lead Co.
	—Glogfoll	15	17 6	ditto
	—East Darven	50	17 6	ditto
	—Cwmystwith	16	12 0	ditto
27	Reg	12	12 0	St. Helen's Lead Co.
	—Pennerley	50	12 10 0	Burry Port Co.
28	Roman Gravel	50	13 9 0	Nevill, Druce, and Co.
	—ditto	50	13 10 0	Panther Lead Co.
	—ditto	30	13 6	ditto
	—ditto	50	13 8 0	Sheldon, Bush, and Co.
	—ditto	50	13 8 0	Burry Port Co.
	—North Laxey	45	13 12 0	Nevill, Druce, and Co.

#### BLLENDE.

Date.	Mines.	Tons.	Price per ton.	Purchasers.
May 27	Reg	40	£4 6 0	Drillway and Co.
28	Roman Gravel	50	4 0 0	Villiers Spelter Co.

#### BLACK TIN.

Date.	Mines.	Tons c. q. lb.	Price p. ton.	Amount.	Purchasers.
May 23	Whitby	11	2 24	£54 8 4	Tregoning.
27	Rosewell Hill	11	2 24	55 5 0	613 17 4
	—Blue Hills	5	19 0 4	—	311 19 5—Dauhu.

#### COPPER ORES.

Sampled May 6, and sold at Swansea, May 26.							
Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Cape Ore	68	30	£ 22 15 6	Var. Ore	105	145	21 15 0
ditto	67	30	22 14 6	ditto	105	145	11 11 0
ditto	66	30	22 17 6	Sobral Ore	82	185	13 13 0
ditto	28	265	27 12 6	ditto	81	185	13 13 0
ditto	65	31	23 15 0	ditto	20	9	6 0 0
ditto	64	31	23 13 6	Copper Ore	7	205	14 11 0
ditto	61	31	23 12 6	ditto	14	125	8 7 6
ditto	11	305	23 9 6	ditto	4	115	7 17 6
ditto	75	30	23 12 0	ditto	81	115	8 2 0
ditto	75	31	23 12 0	Copper Reg.	25	8	4 0 0
ditto	75	31	23 12 0	Conceitu Ore	7	505	39 14 0
Reecheven	114	75	5 2 6	Conceitu Reg.	7	205	15 6 6
ditto	53	75	5 2 6	ditto Reg.	4	505	39 19 0
ditto	113	75	5 2 6	ditto	2	505	39 14 0
Knockmuckin	150	85	6 7 6	Copper Ore	1	175	12 11 0
ditto	143	85	6 12 0				

#### TOTAL PRODUCE.

Cape Ore	632	£15,395 16 0	Copper Ore	106	£906 14 0
Reecheven	310	1,588 15 0	Copper Reg.	26	104 0 0
Knockmuckin	273	1,772 11 0	Clovenure Ore	7	278 15 6
Var. Ore	211	2,459 6 0	Copper Ore	13	343 9 6
Sobral Ore	183	231 19 0	Copper Ore	1	12 11 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.			
Names.	Tons.	Amount.	
Copper Mines' Company	393	£4,933 8 0	
P. Grenfell and Sons	149	2,048 7 6	
Nevill, Druce, and Co.	174	2,539 10 0	
Vivian and Sons	163	2,224 19 0	
Williams, Foster, and Co.	456	6,678 9 0	
Mason and Elkington	102	2,432 0 0	
Sweetland, Tuttle, and Co.	323	4,072 3 6	
Landore Copper Company	26	104 0 0	
Total	1792	£25,430 17 0	

Copper ores for sale, at Swansea, on June 9—Cape Ore 62, 62, 75, 35, 72, 85, 56, 58, 71, 30, 5, 3—Knockmuckin 145, 107—Brass Ashes 75—Italian 70, 31, 4, 14—Erecheven 7—Copper Stuff 2—Reecheven 99, 146—Rampfide 46—Total, 1341 tons.

TOTALS AND AVERAGES.			
Whole sale	Produce.	Price.	Per unit. Standard.
1792	19	£14 4 0	14s. 10d., £96 3 3

### The Mining Market: Prices of Metals, Ores, &c.

METAL MARKET—LONDON, MAY 29, 1874.

COPPER.				IRON.			
Best selected.	ton	£	s. d.	per ton.	£	s. d.	£
Tough cake and tile.	82	0	0-83 0	Do., Welsh, in London	9	0-10 5	0
Sheeting & sheets.	90	0	0-91 0	Do., to arrive	9	0-10 5	0
Boils	95	0	0-98 0	Nail rods	11	0	—
Bottoms	93	0	0-95 0	Do., in London	11	5	0-11 10 0
Old	80	0	0-85 0	Bars, ditto	11	10	0-14 0 0
Australian	83	0	0-85 0	Hoops, ditto	12	10	0-14 0 0
Wire	0	1	0-03 0	Bars, at works	10	10	0-11 10 0
Tubes	0	1	0-03 0	Hoops, ditto	11	10	0-14 0 0
BRASS.				STEEL.			
Sheets	100	1	0-11 0	Do., single, & plates	13	10	0-15 0 0
Wire	100	1	0-11 0	Do., in Wales	5	0	0-6 10 0
Tubes	100	1	0-11 0	Refined metal, ditto	7	0	0-8 0 0
Yellow metal sheeting	100	1	0-11 0	Bars, common, ditto	9	0	0-9 5 0
Sheets	100	1	0-11 0	Do., merchant, f.o.b.	9	0	0-9 5 0
SPELTER.				In Tyne or Tees.			
Foreign on the spot	22	0	0-22 10 0	Do., railway, in Wales	8	0	0-8 5 0
"to arrive	22	0	0-22 10 0	Do., Swed. in London	13	0	0-18 0 0
ZINC.				Do., to arrive	16	10	0-18 0 0
In sheets	27	0	0-28 0 0	Pig No. 1, in Clyde	4	10	0-6 0 0
Quicksilver (p. bot.)	19	15	0-—	Do., f.o.b. Tyne or Tees	4	0	0-5 0 0
TIN.				Do., Nos. 3, 4, f.o.b., do.	5	0	0-5 5 0
English blocks	£100	0	0-101 0 0	Railway chairs	5	0	0-5 5 0
Do., bars (in br.)	101	0	0-102 0 0	Do., in London	12	10	0-14 0 0
Do., refined	103	0	0-104 0 0	Do., in Tyne or Tees	10	0	0-12 0 0
Do., Banca	100	0	0-102 0 0	Do., in London	10	0	0-12 0 0
Do., Straits	98	0	0-98 10 0	Do., in Tyne or Tees	10	0	0-12 0 0
Australian	94	0	0-94 10 0	Do., in London	10	0	0-12 0 0
TIN-PLATES.				LEAD.			
IC Charcoal, 1st quality	£1	16	0-Non.	English Pig, com.	20	15	0-—
IX Do., 1st quality	2	0	0-—	Do., L.B.	20	15	0-21 0 0
IX Do., 2d quality	1	15	0-—	Do., W.B.	20	15	0-—
IX Do., 3d quality	1	0	0-—	Do., sheet	20	15	0-—
IX Coke	1	9	0-1 0 0	Do., red lead	20	15	0-—
IC Do.	1	15	0-1 10 0	Do., white	20	15	0-32 0 0
Canada plates, p. ton.	19	0	0-—	Do., patent shot	25	0	0-—
Ditto, at works	18	10	0-—	Spanish	20	5	0-20 10 0

\* At the works, 1s. to 1s. 6d. per ton less. † Add 6s. for each X. Terms—plates 2s. per box below tin-plates of similar brand.

**REMARKS.**—The general dullness which has been the characteristic of the metal market for some time past has experienced no amelioration during the past week. Metals have been without animation, and actual business has been restricted within the narrowest limits. The demand for consumption or shipment is very small, and there is but little speculation to afford support to prices. The Whitsuntide holidays may to some extent have tended to increase the quietness of the market, but this cause has really very little to do with the prevailing stagnation. It is easy to point out the causes, and to prescribe various remedial measures, but the great difficulty still remains that nothing has yet been practically accomplished to put the metal trade of the country upon a satisfactory footing. The reduction of the bank rate on Thursday last to 3½ per cent. is indicative of the unwarmed eloquence of money in the spring season of the year. The requirements of trade are not now what they usually are, and the lowering of the official rate of discount, which in ordinary times is followed by increased activity in business, does not appear at the present juncture to have imparted the slightest activity to our markets.

**COPPER.**—The market closed last week with an appearance of firmness, which, however, has not been maintained throughout the week now drawing to a close. Monday was a close holiday in consequence of the Whitsuntide recess. On Tuesday the announcement was received of the disposal at Swansea, on the previous Saturday, of two cargoes of Chilean ore, amounting to about 1500 tons, at 15s. per unit. This day's ticketing averaged 14s. 10½d. for produce averaging 19 per cent., and Cape ores 15s. 4½d. Intelligence was received of the charters from the West Coast for the last half of April, which amounted to 2600 tons, made up of 1900 tons bars and 500 tons ores and regulus, for England, and 200 tons for America. The price from Valparaiso comes also lower. For the corresponding dates of previous years the charters were—1873, 3000; 1872, 340; and 1870, 2100 tons. The quantity now coming forward being above the average, and the demand being below the average of years, the tendency of the intelligence has been to depress prices somewhat, and sellers have not found it easy to find purchasers at current quotations. A small amount of business has been transacted in Chile bars, good ordinary brands at 73s. to 74s. At the former price there are rather buyers to a moderate extent. The business in Australian copper has been extremely limited. Banca is quoted at 83s. 10s. to 84s., and Wallaroo 86s. to 87s. 10s. English varieties are dull of sale. Tough is quoted 82s. to 83s.; best selected, 84s. to 85s.; India sheets, 90s.; strong sheets, 92s.; and yellow metal sheeting, 7½d. to 8d. Until prices generally are reduced still further there is no inducement to buyers to come forward to any extent, and it is not likely that any permanent improvement will take place unless supplies fall off very considerably, or an unexpected demand should suddenly spring up.

**IRON.**—The present week is drawing to a close without throwing any further light upon the difficulties which still continue in the iron trade. From the North of England the reports are to the effect that the men appear determined to abide the issue of the present contest, and that as long as the masters refuse to withdraw their notice for a reduction in wage they (the men) will not return to work. On the other hand, the employers have again and again asserted their unity of judgment that in the present depressed state of trade generally, and the price of pig-iron, they are clear that a reduction of 12 per cent. in the rate of wages does not meet the exigencies of the case; and that, come what will, they cannot and will not lessen their demand. In view of the possible prolongation of the contest, Messrs. Bolekov and Vaughan have already dumped down several of their furnaces. Messrs. Thomas Vaughan and Co. have also dumped their example, likewise the Tees Steam Bridge Company, of Stockton. Other makers have blown out their furnaces, or are contemplating the step, while some are working at half blast. So long as this struggle continues the list of furnaces blown-out or dumped-down will become ominously heavier week by week. The time for monster meetings appears to have passed, and at the present moment there is a lull in the consultation which have been held between masters and men, but this, perhaps, only portends the possibility of more serious disaffection and differences at no distant period. It is supposed that upwards of 2000 miners have already left the Cleveland district. As the furnaces failed to produce pig-iron, and large numbers of operatives are thus thrown out of employ, the supply of pig-iron being insufficient to meet the requirements of the finished iron trade, a still larger number of workmen may, probably, find themselves necessarily out of work before long. The evil is not confined to the iron trade alone, but extends to the coal trade likewise. A continuance of the strike in the former will to a great extent compel cessation of work in the latter.

Prices of pig-iron are somewhat firm, owing to the scarcity which is beginning to be felt. No. 1 is quoted 81s.; No. 3, 72s.; forge iron, No. 4, 60s. The prices of finished iron of various descriptions are easier. Rails of heavy sections are quoted at about 9s.; and ship plates, 10s. 5s. The position of affairs in South Wales is quite as unsatisfactory as in the North of England; there is little or nothing doing. The Whitsuntide holidays may to some extent account for this, but now that they are over there is no improvement to record. At the expiration of this month the notices which have been issued to the men will expire, and it will be necessary for the workmen to come to some decision as to the future. The present opinion which appears to prevail is that the 10 per cent. reduction should be accepted, but great uncertainty overhangs the future. This being so, there is hardly any trade doing at all, buyers and sellers alike standing aloof, neither party caring to enter into transactions the end of which is so uncertain. Should the masters stand to their present offer, and the men accept it, there is every expectation of some return to activity, but the confidence of buyers has been so rudely shaken that it will be long ere they enter upon the course of extended commitments, and which in past times they were accustomed to. The Scotch pig-iron market closed last week at 88s. 9d., and on Tuesday there were but few transactions recorded, and those showed no variation from the closing quotation of the previous week. Wednesday's market opened firm, and transactions were reported up to 88s. At the close there were buyers at 88s. 4½d., and sellers at 88s. 6d. On Thursday the firmness of the previous day was not maintained. The opening price was 87s. 9d., the market afterwards receded to 87s., and at the close there was an improvement to 88s. 3d., buyers; and 88s. 6d., sellers. To-day the market has been firm, and business has been done at 88s. 6d. to 88s. 9d., closing buyers.

SHIPMENTS.	
Week ending May 24, 1873	Tons 17,173
Week ending May 25, 1874	6,705
Decrease	10,468
Total decrease since Dec. 25, 1873	94,865

The falling off in shipments is lamentably great, and the condition of the Scotch pig-iron trade generally is most discouraging. It is useless to look for improvement until the labour question shall be disposed of. The rate of wages among the pitmen and ironstone workers must be reduced to a point which shall enable makers to produce pig-iron at a price at which the public will buy, and manufacturers can sell without loss.

**LEAD.**—The downward tendency in this metal has been arrested, and the market is very firm, but this is caused rather by short supplies from Spain than any increased demand. Good soft English pig is now quoted 21½ and 20½ 15s., and soft Spanish without silver 2s. under.

**SPELTER.**—Common Silesian has been disposed of during the week at about 22½ 5s. The market is lacking animation.

**ZINC.**—London rolled has been sold at 25½ 12s. 6d., and 25½ 10s. The balance of the parcel of 160 tons—45 tons—was bought in at 26½. QUICKSILVER continues unchanged at 19½ 15s. per bottle.

**TIN.**—During the early part of the week there was not much doing in the tin market, but, in anticipation of a satisfactory sale in Holland, which came off this day, prices advanced somewhat, and Straits realised 100%. However, upon receipt of the intelligence that 23,228 slabs of Banca tin had been sold in Holland at an average price of 57½ florins, which was lower than had been anticipated, the market became unsettled, and quotations are, at the moment, only nominal.

**TIN PLATES.**—The works are still closed, and nothing doing. There is but a poor demand for them.

**MANGANESE.**—From a telegram received yesterday afternoon from the Edgcombe Manganese Mine, which is situated near Milton Abbot, it appears that one of the most remarkable discoveries has been made there that has occurred in the county for many years. After extensive explorations a lode has been cut into of great size, and of the richest description. It is considered certain to produce an immense influence on the future of manganese production.

Notwithstanding that the settlement of the fortnightly account in the MINING SHARE MARKET has occupied a good deal of time this week, an active demand has sprung up for shares, especially in tin mines, and there has been a good business transacted, at advanced prices.

The Banca sale of tin, we understand, has gone off well; this metal is firmer, and likely to advance, and the rise in the copper standard is also looked upon as favourable.

The mines dealt in this week have been Carn Brea, Tankerville, Van Consols, Penstruthal, Prince of Wales, West Basset, South Curdarrow, Wheel Kitty (St. Agnes), Wheel Grenville, Old Bottle Hill, Old Treburgett, Hingston Down, South Dolcoath, Dolcoath, East Lovell, and a few others. Hingston Down, ½ to 1½; at the meeting this week the accounts for six months, from Nov. 1 to April 30, show a loss of 1300 4s. 11d. The ores sold to Feb. 19 realised 3890 3s. 7d. without carriage. The statement of assets and liabilities shows a balance of 6749 5s., valuing the plant at 4700 5s., and including sales of ore—March 19, 566½ 14s. 7d.; ditto, April 23, 720½ 15s. 5d.; and estimated ores at surface, 7300. The costs charged on the other side, for April, 6000 6s. 10d. The last month's sale, 875½, gave a small profit, and better results are anticipated at the next meeting, in November. The costs of the mine are 7000 per month. In the 140 fm. level there has been a continuous course of ore for 35 fms. long, varying from 70½, 40½, 20½, 10½, and 5½ per fathom; and in the bottom of this level, 60 fms. to the west of shaft, a winze is in course of sinking, worth 500 per fathom for length carried—9 ft. This is down 6 fathoms, and looks well for the future of the mine.

Devon Great Consols, 1 to 1½; at the meeting, on Thursday, the accounts, an analysis of which we gave last week, were passed. The directors have endeavoured to keep the expenditure as low as possible without impairing the efficiency of supervision or the progress of operations, and regret that the receipts, owing to the continued depression of copper ore, are so inadequate. But the prospects, particularly in one or two important points, are such as to justify the expenditure, and to give encouragement for the future. The ore ground laid open to April 30, and in reserve, is estimated at 20,488 tons; arsenical mud, 16,840 tons.

Tankerville, 9½ to 9½; the lode at the shaft is improving, and the agent thinks it is on the top of a new run of ore. The 110 has also improved to upwards



retarded progress. As the distance yet to run is not now many feet we may shortly expect to hear of its completion. The *Eureka Cupel* of May 4 gives many strong and good reasons why the new railway should be pushed to completion, and announces the determination of the contractors to proceed as rapidly as possible, so as to have the enough done this year to remove great part, at all events, of the freight and fuel difficulty, which, owing to the unusually severe and late winter, has delayed the mining season full six weeks, and still operates to prevent the usual supply of charcoal being brought in, owing to the impossibility of preparing it at the usual period. Eberhardt and Aurora, 33 to 35. Mineral Hill Mine has raised, during the week ending May 4, 60 tons of ore, of an average grade of \$350 per ton, at a cost (including stores, materials, and sorting waste dumps) of \$964. New Pacific, 8s. 6d. to 10s.; the agent reports that he is still driving on the ledge, which has greatly increased in size, but not to value. Other parts of the mine are looking like im-

proved. Emma shares have been almost entirely neglected, and close 2½ to 2½; the efforts made by a small body of speculators to advance the nominal quotation have signally failed to produce the desired effect, it now being pretty well ascertained that the object in creating an artificial market had been by no means disinterested. The eventuality that last week was indicated as likely to take place—hostile action on the part of the Illinois Tunnel Company—has, according to a vague rumour, actually occurred; as, however, the rumour, so far, is unauthenticated, it must be accepted for what it is worth. Flagstaff shares close weak at 4 to 4½; Mr. Patrick reports that between Jan. 14 and March 31, 3051 tons of ore were extracted, producing 921½ tons of bullion, of the value of \$188,000, at a total cost (including smelting) of \$121,824, leaving a net profit of \$66,176. The fortnightly settlement, concluded yesterday, developed a "weak bull" account—in other words, that a large number of shares had been purchased speculatively for a rise by parties unprepared or unable to take the stock off the market. Private advices state that the richer "reserves" of ore are being rapidly exhausted, and that the returns of late have consisted of a lower grade ore, and that the exploratory workings are reduced to the lowest possible limit. Last Chance, 2 to 2½; Tecoma, 1 to 1½; Utah, 1½ to 1½; Mr. Longmaid writes that he has just started the machinery, but finds that it requires one or two slight alterations which when made will enable him to push along without stop. Weather now splendid, and things looking cheering for future.

Shares in the Hydraulic or Gold Washing Mines continue in good request, and at advancing prices. Cedar Creek shares have slightly improved; Birdseye Creek in demand, and scarce; Blue Tent firm at quotations, and many transactions; Sweetland Creek in good request. Blue Tent, 5 to 5½; Col. Tozer writes, under date of May 6, that washing was proceeding satisfactorily on both Enterprise and South Yuba claims. The day previous to writing there had been a heavy fall of snow. Cedar Creek, 2 to 2½; washing is being carried on as usual. Sweetland Creek, 4½ to 4½; washing is proceeding as usual; the tunnel is in 422 ft. past the shaft. The latest advices reach only to May 2. Birdseye Creek, 3½ to 3½; work going on as usual. Mr. Powers expects a better result at the current clean-up, as he is getting through the dead work at the face of the Neece and West Tunnel. Holcombe Valley, 19s. to 21s.; an interesting report will be found in another column. All the works were progressing satisfactorily; the assay of the sulphurets is wonderfully good, and at anything like the value it gives \$410½ per ton; the returns will be large. In view of the influx of miners to the district, Mr. Haley has connected sawing machinery with the mill to supply the necessary timber, &c., of which the company possesses a very large quantity, and from this source some handsome returns will be made this season.

Sierra Buttes, 2½ to 2½; the advices from the mine continue satisfactory, and the supply of water for the stamps is abundant; a good clean-up is anticipated for the current month. Independence, 2½ to 3; the new levels have been driven 20 feet in the eastern shoot, and the quartz looks well from the ground driven through. There have been 35 tons of rich quartz sent to the stamps, and the prospects for a good yield of gold are very favourable. The latest advices, May 2, state 10 stamps commenced running on May 1, and it was expected that 10 more would be started during the month. The ore going to the mill appeared to be of good quality, and the superintendent reports the prospects to be promising.

St. Lawrence Gold, 4½ to 5½; Mr. Rodda, the superintendent, writes, May 6—"On the 4th the contractor started to sink the 800 ft. station, expected to be reached in seven weeks. Indications are that we shall have a larger body of ore in the 800 ft. station than we have at the 700 ft. I am still short of good miners. The mill started this morning with 30 stamps. The north stope continues to look well. Javal, 3 to 4; at the special meeting, reported elsewhere, it was explained that some definite action had been rendered imperative necessary by the lamented death of the late Chairman, upon whose financial aid the existence of the company had so long mainly depended. It appears that the advances made to the company by the late Chairman amounted to nearly \$8000, and the executors, while requesting a settlement, have expressed their willingness to accept in lieu of payment the company's debentures, bearing interest at the rate of 7 per cent., upon the condition that the general body of shareholders provide an additional \$5000. By the expenditure of this amount in providing further machinery it is calculated that the returns of gold would be brought up to \$23,000, or \$25,000, a year, leaving a net profit of \$12,000, or \$15,000. The ore now available is computed at something like 500,000 tons, sufficient to keep the whole of the additional machinery fully employed for 50 years. A resolution was passed concurring in the advisability of raising the \$5000, the meeting pledging itself to subscribe its proportion.

St. John del Rey, 250 to 260; the directors notify they will pay off the outstanding debentures on Jan. 30, 1875. Don Pedro, 3 to 4 dis.; the estimate for April is \$2000, 30; stoping was being carried on as usual, and without change in the lodes.

Rio Tinto shares have advanced, and close 4 to 4½ prem.; the report preparatory to the meeting on Thursday (which appears in another column) has been favourably received. It points out that, owing to the financial necessities of the Spanish Government, various proposals have been made to the company to anticipate the nine annual payments by which the balance of the purchase-money was agreed to be paid; these obligations are it is stated, now in London, and the directors are endeavouring to bring about a successful issue. The only produce from the mines during construction is the precipitate, and of this 418 tons have been dispatched and 172 tons sold, producing a profit of \$432; this is further augmented by \$662, profit on bar-copper taken over at a valuation from the Spanish Government. Cape Copper, 28 to 29; the returns during March from Oukiep were 670 tons of 31 per cent. ore; and from Spectakel 38 tons of 30 per cent.; 550 tons of ore were sold on April 28 by public ticketing, at an average, of 15s. 0½d. per unit, realising approximately \$12,900. New Quebrada, 3 to 3½; Devon Great Consols, 1 to 1½; the details of the general meeting appear in another column.

Van, 26 to 28; the 75 west is driven 12 fathoms, and still in good ore; east no change since last report. The 60 west is worth 75% per cubic fathom. The 45 and 30 west are improving as the levels are extended. Other parts of the mine without alteration. Bog, 3 to 4; a full report will be found in another column. The mine is apparently improving in several places. The monthly sale of lead and blende on Wednesday realised \$800, 15s. Pennerley, 1½ to 1½; a cheering report from the agents will be found in another column. There are many points of value in the mine, and some of them are likely to improve. The monthly sale on Wednesday realised \$1000. Shares steady at quotations, but comparatively neglected.

Subjoined are the closing quotations:—Bog, 3 to 4; East Brea, 67½ to 72½; Devon Great Consols, 1 to 1½; East Canon, 11 to 12; East Canon Brea, 2½ to 3; East Van, 1½ to 1½; Great Laxey, 11½ to 12; Great Wheel For, 3 to 4; Marke Valley, 1½ to 1½; Pennerley, 1½ to 1½; Perkins Beach, 3 to 4; Pennerley, 1½ to 1½; Pennerley, 1½ to 1½; South Condlow, 3½ to 3½; Tinselt, 31 to 33; Tankerville, 9 to 9½; Van, 26 to 28; Van Consols, 4½ to 4½; West Basset, 10½ to 11; West Tankerville, 1½ to 1½; Wheel Grenville, 5 to 5½; Almada and Tinto, 5 to 5½; Birdseye Creek, 3½ to 3½; Cedar Creek, 2 to 2½; Cape Copper, 28 to 29; Colorado Terrible, 3½ to 3½; Consols, 1 to 1½; Don Pedro, 3 to 4 dis.; Eberhardt and Aurora, 33 to 35; Emma, 2½ to 2½; Flagstaff, 4 to 4½; Frontino and Bolivia, 4 to 4½; Independence, 2½ to 3; Last Chance, 2 to 2½; Malpas, 3 to 4; Malabar, 3 to 4;

3½; New Pacific, 7s. 6d. to 12s. 6d.; New Quebrada, 3 to 3½; Port Phillip, 3 to 4; Rio Tinto, 3 to 4 prem.; Rica, 3 to 4; Richmond Consolidated, 7 to 7½; Sweetland Creek, 4½ to 4½; St. John del Rey, 250 to 260; Sierra Buttes, 2 to 2½; Utah, 1½ to 1½; United Mexican, 8 to 8½; Tecoma, 1 to 1½.

**COLLIERIES AND IRON COMPANIES.**—The variations during the week have been few and unimportant, owing to a large extent to the fortnightly settlement (concluded this evening), and the Bank holiday on Monday. Cardiff and Swansea, United Bituminous, Marbella, Chillington, Welsh Freehold, West Mostyn, Pelsall Coal, New Sharlstone, and Vancouver Coal have been the shares principally dealt in, with moderate transactions in a few others. The ironstone miners of Cleveland are still out on strike, and the works are idle, presenting a striking contrast to the new iron districts in Cornwall, where all life and activity, in view of the opening, throughout its entire length, of the Cornwall Minerals Railway, which is announced to take place on Monday, June 1. It is believed that thousands of tons will be sent away daily, and that the industry will furnish sufficient employment to fill up the hiatus occasioned by the depression in tin and copper mining. Already large quantities of ore are being transported to Par from the mines near Cubert. Probably 100 tons are carried every night, 500 men being employed in breaking the ore. Ebbw Vale, 5½, 5½ dis.; Merry and Cuninghame, 3½ to 3½; Marbella, 4½ to 5; Bowling Iron, 75 to 80; Newport Abercrombie, 3½ to 3½. It is announced that, preparatory to the meeting, the transfer books of Wayne's Merthyr Steam Coal Company (Limited) will be closed from the 29th inst. to the 2d proximo; no directors' report will be presented. Cardiff and Swansea still in good demand, at 3½ to 4, and scarce; United Bituminous, 15s. to 20s. The report of the directors of the Skerme Ironworks shows that the company has made a loss of 13,000% during the year. In another unfortunate concern (the Carlisle Steel) the shareholders have determined to oppose the winding-up of the company, and to prosecute the directors and vendors; shares are unsaleable. Thorpe's Gawber Hall, 1½ to 1½; Welsh Freehold, 3 to 4; West Mostyn, 1½ to 2½. A heavy fall was noted in Nant-y-Glo and Blaina yesterday; shares receded 10%, closing 30 to 40. Darlington Iron have improved 10s. during the week, closing 8 to 9. Chillington Iron, 5½ to 6; Chapel House Colliery, 4½ to 5½; Ifton Rhy, 2½ to 2½; Silkstone Fall, 3½ to 4½; South Cleveland Iron, 11, 9 dis. Ilan-genech's advanced, and closed firm, at 2½ prem. The Parkgate Iron Company (Rotherham), at their tenth annual meeting, declared a dividend of 15% per share, being at the rate of 23 per cent. per annum, and it was stated that the plant belonging to the company, both at Parkgate and the Holmes, had been kept in good repair out of the revenue. This is the ninth week of the strike of the Staffordshire colliers, and no appearance of a settlement. Earl Dudley has put out another furnace, leaving only one in out of five. Out of the aggregate of 153 furnaces in the district 42 are blown out. Some 400 colliers are working in one of the Dudley pits on the reduced terms.

At Swansea Ticketing, on Tuesday, 1792 tons of copper ore were sold, realising 25,430, 17s. 0d. The particulars of the sale were—Average standard for 9 per cent. produce, 96% 3s. 3d.; average produce, 19; average price per ton, 14, 4s. 0d.; quantity of fine copper, 340 tons 10 cwt. The following are the particulars of the two last sales:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
April 28...	1393	93 13 0	19 1/2	14 6 5	14 6 5	472 10 0
May 28...	1792	96 3 3	19	14 4 0	14 4 0	74 3 4

Compared with the last sale, the advance has been in the standard 2, 5s. 0d., and in the price per ton of ore 9s. There will be offered for sale, on June 9, 1541 tons from the Cape, Knockmahon, Italy, Berehaven, Bampfyde, and elsewhere.

The MCHENRY MINING COMPANY are inviting subscriptions for 2000 TWENTY-FIVE PER CENT. PREFERENCE SHARES of 100 each, the mining claim which the company is engaged in working being 1500 ft. in length and having a thoroughly investigated title. It is situated in the Blue Ledge district of the Wahsatch Mountains, Utah, and is considered as perhaps the most remarkable in the Territory, both for the richness of the lode and its enormous indications. The outcrop, or extremity exposed to view, is almost unparalleled, and, as may be seen from the reports of the engineers, it exceeds 200 ft. in length by 75 ft. in depth. It has been bored and proved in various points, showing an amount of ore estimated at over 10,000 tons in the outcrop alone. In addition to this, a tunnel has been driven, intersecting the lode itself at a depth of 150 ft. from the highest point of the outcrop, and shafts have been further sunk to an additional depth of 115 ft., with levels proving the lode at that depth to be of magnificent ore. The lode lies between a footwall of syenitic country rock and a hanging wall of grey porphyry, thus distinguishing it from the usual class of deposits found in Utah. The certificates of assay of the ore show values in silver ranging up to over \$1000 per ton, with an average of about \$300 per ton. The ore is a free milling one, requiring no roasting, as it contains no base or rebellious metals. Arrangements have been made for the sale to this company of a first class 20 stamp mill, towards the purchase of which the unappropriated shares of the company have been reserved. It is estimated that the profits would amount to the sum of \$5,000, per annum, and as the amount required to provide the 25 per cent. interest on the whole preference capital is only \$15,000, a year, there would remain, after making an ample reserve fund, an additional dividend of at least 20 per cent., or together, 45 per cent. per annum. Even a large reduction on this estimate would, therefore, produce a highly satisfactory result. But if the assay average as above, of \$300 to the ton were taken, or (say) net \$275 instead of the lowest estimate of \$250 per ton, the results obtained would be enormous, and it must be remembered that notwithstanding the numerous ill-judged investments that have been made in American mines by Englishmen, there are many in various parts of the Western States which have returned gigantic profits, notably those on the Comstock lode, which have yielded already in dividends 20,000,000 sterling. The prospects will be found in another column.

The BRISTOL PORT AND CHANNEL DOCK COMPANY are inviting subscriptions for 87,000% deferred stock, entitled to 7 per cent. per annum for three years, being two years and a half after the date appointed for the completion and opening of the docks. The docks, about 90 acres freehold, are situated at the mouth of the River Avon, with direct access from the Severn and the Bristol Channel, and will be easily and safely approached at all seasons, in all weathers, and at almost any state of the tide, by steamers and ships of the largest class, for whose accommodation they are specially adapted. The geographical position of Bristol offers advantages for an ocean steam trade unequalled by those of any other port, on account of the facility of reaching it in a direct line from the Atlantic, free from the dangers of the English and St. George's Channels; but it has been hitherto impossible to turn these natural advantages to full account in consequence of the difficulty of reaching the old docks, which can only be approached through the tortuous and dangerous channel of the River Avon, from whose mouth they are about 6 miles distant. This difficulty has been found to operate so prejudicially as to render it an absolute necessity to construct docks suitable for vessels of large tonnage in a situation more easy of access, and so as to allow the natural capabilities of the port to be fully utilised. Coal being probably the most important item in the steam-shipping trade, the Bristol Port and Channel Docks, from their close proximity to the Welsh coal ports, will effect for steamers an average saving in freight, insurance, breakage, &c., of about 8s. 6d. on every ton of Welsh steam coal, in comparison with the principal steam ports of the country. On a line of steamers making a weekly departure throughout the year, requiring on an average (say) 2000 tons of coal per week, the saving would amount to over 30,000% per annum. Recognising the importance of this undertaking, and with a view to the great traffic that must necessarily result from these docks on their completion, the Midland Railway Company and the Great Western Railway Company have jointly for some time past been engaged in constructing railways, now nearly completed, to connect the lines of both those companies with the Bristol Port and Channel Docks. The deferred stock being entitled to all the earnings of the undertaking after payment of the debenture interest, and 6 per cent. on the preferred stock, it will be seen that on the basis of the estimated income there would remain £18,465 per annum available as dividend on the deferred share capital (part of which is now for subscription), equal to 12 per cent. per annum thereon. This unusually advantageous return to the holders of the deferred stock arises from the fact that the dividend on the preferred half of the capital is limited strictly to 6 per cent. per annum, while the estimated return on the entire capital is about 9 per cent. The prospectus will be found in another column.

It is announced that the transfer books of the Erie Railway Company will be closed in New York on Saturday, the 13th prox., and no applications for transfer can be received at the London offices after that date until the reopening of the books on July 15 following. The Sterling Debentures of the Leeds (Quebec) and Kennebec Railway Company are 87 to 88.

Messrs. Vivian, Younger, and Bond.—COPPER: The market became slightly firmer at the close of last week, and fair sales were made from 74½ up to 75½, for Chili bars, ordinary brands, and 77 for J. Edwards. A cargo of regulus arrived, at 15s. 3d. per unit, and two cargoes of Chili regulus at Swansea at 15s. per unit. On Tuesday last the market again became unsettled, owing to the announcement of charters for the fortnight ending 30th ult., at Valparaiso, equal to 2600 tons in fine copper (in the proportion of 700 tons ores and regulus to 1900 tons bars and ingots to England, 200 tons of the former being for the United States). A few sales of bars have been made at 73½ to 73½, 10s., and the general tone at the close is dull. In Australia there has been little doing, the quotation of 87 for Wallaroo still asked, from first hands being very dear relatively to other sorts. At the Swansea Ticketing, on Tuesday last, 1792 tons British and foreign ore sold at an average of 15s. 11d. per unit for an average produce of 19 per cent., Cape ore of 20½ per cent., realising 15s. 4½d. per unit. The demand for manufactured is very moderate at 9½ for strong sheets, and also for tough and best selected at 82½ and 84½ respectively.—TIN: There has not been much doing pending the Banca sale, which takes place to-day (Friday), but, on the whole, the market has hardened during the week, Australian, in which the transactions have been more general than

in Straits, selling at from 93s. to 97s., as in quality and terms. Straits sold at from 96s. to 101s. in small parcels; 800 slabs Billiton at 96s., and 400 slabs at 97s., Dutch warrants. In English a rather slack demand at 99s. to 102s. for ingot. As we close the Banca sale is announced as opening at 59½ lbs., equal to about 1000 lbs. laid down here.

Messrs. James and Shakespeare.—COPPER: By private contract we note two cargoes (about 1350 tons together) of Chili ores at 15s. per unit. At the Swansea Ticketing, on the 26th inst., 1792 tons of ore, averaging 19 per cent. produce, fetched an average of 14s. 10½d. per unit. In bars there was a rise of 20s. per ton at the close of last week, but this advance, with another 10s. to 20s. besides, has been lost during the current week, owing to the Chili telegram advising charters of 2600 tons pure for the last half of April. Of the said quantity 1900 tons were in bars and ingots, 500 tons in ores and regulus for England, 200 tons pure for the United States; the price of bars at Valparaiso still shows a loss as compared with values now ruling here. The corresponding charters for 1873 were 3000 tons. The business done in bars, from and including the 22d inst., has been of a very moderate character; and, as both buyers and sellers seem equally disinclined to operate, quotations are difficult to fix with accuracy. Australian sorts are neglected, and the leading brand—Wallaroo—is still held for our top price, whilst purchasers decline to pay within 20s. and 4 s. of that rate, according to the quantity required. To give prompt delivery of sheets, and manufacturers are for the most part unable to give exact quotations. Foreign sorts have been in more demand, owing to the impression gaining ground that the sale of Banca in Holland this day will go off at a high figure; we, therefore, note an improvement since Friday last of about 2s. per cwt. In Straits business was reported from 98s. to 101s.; Australian, 95s. to 97s. cash; Billiton, 96s. to 97s. Dutch warrants, and 98s. in warehouse London.

#### COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF THOMAS E. WALES, Esq., H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will be HELD on the 6th and 7th days of July next, and CANDIDATES intending to present themselves at such EXAMINATION must, on or before the 30th day of June, notify such intention to the Secretary of the Board of the above-mentioned district, from whom all information as to particulars can be obtained.

By order of the Board,  
CHAS. H. JAMES, Secretary,  
8, Courtland terrace, Merthyr Tydfil.

#### COAL MINES REGULATION ACT, 1872.

EXAMINATIONS FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF THOMAS EVANS, Esq., H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-named Act, will shortly be HELD, and CANDIDATES intending to present themselves at such EXAMINATION must, without delay, notify such intention to the Secretary of the Board of the above-mentioned district, from whom all information as to particulars can be obtained.

By order of the Board,  
WM. SAUNDERS, Secretary,  
Full-street, Derby.

#### ORES, &c.

I BUY at the highest prices:—  
LEAD ORES.—LEAD-SILVER ORES.—SILVER-LEAD ORES.  
SILVER-LEAD.—HARD LEAD.—ANTIMONIAL LEAD.  
GOLD AND SILVER ORES.  
ZINC AND LEAD ORES MIXED TOGETHER.

Particulars by letter.  
ARMAND FALLIZE, Ingénieur, à Liège (Belgium)

#### Mr. JOHN HENRY POOLE,

MINERAL AGENT,  
LIMPIAS, PROV. SANTANDER, SPAIN.

#### CAPPER PASS AND SON, BRISTOL,

ARE PURCHASERS OF  
ANTIMONIAL or HARD LEAD, LEAD MATTE, LEAD SLAGS, LEAD ASHES, SULPHATE OF LEAD, COPPER SLAGS, COPPER REGULUS or MATTE, TIN ASHES, and TIN SCRUFF.  
MIXED METALS and DROSS, containing LEAD, COPPER, TIN, or ANTIMONY.

#### COPPEE COKE OVENS.

COMPLETE INFORMATION respecting these PATENT COKE OVENS may be obtained from—  
THE COPPEE COKE COMPANY (LIMITED),  
91, GRACECHURCH STREET,  
LONDON, E.C.

#### FOR AMERICAN COMPANIES.

MR. F. M. F. CAZIN, MINING AND CIVIL ENGINEER,  
MANUFACTURER OF ORE-CONCENTRATION MACHINERY,  
PATENTEE OF CAZIN'S AUTOMATIC CONTINUOUS ONE-PLUNGER JIG (ORE SEPARATOR).  
Offers his services for making Plans and Contracts for Ore Concentration and Smelting Works, for EXPERTISING, SURVEYING and REPORTING concerning MINES and MINERAL LANDS for the administration of Mines in the territories of COLORADO and NEW MEXICO; also as Agent for the Sale of GENERAL AND SPECIAL MACHINERY.

No. 243, SIXTEENTH STREET (Lock box 2255), DENVER, COLORADO.  
References: International Bank, St. Louis, Mo.—Messrs. Collins, Snider, and Co., Bankers, Denver, Colorado.

#### SALT LAKE CITY, UTAH TERRITORY, U.S. AMERICA.

#### N. BREDEMAYER,

MINING AND CONSULTING ENGINEER,  
U.S. MINERAL SURVEYOR.

Particular attention paid to Underground Surveys.

OFFICE.—KIMBALL BLOCK, SALT LAKE CITY.

#### A. HEATHERINGTON,

(CANADIAN MINES BUREAU).

HALIFAX, N.S.

LONDON, ENGLAND.

OFFICE: 25, PRINCE STREET. 30, MOORGATE STREET,  
MAIL ADDRESS: G. P. O. Box 323. E.C.

N.B.—The ONLY OFFICES in EUROPE and AMERICA exclusively devoted to the advancement of CANADIAN MINING INTERESTS.

HARDEN AND SON,  
MINING ENGINEERS AND GEOLOGISTS,  
430, WALNUT STREET, PHILADELPHIA, U.S.A.

#### MINING IN SPAIN.

OWING to the present state of matters in Spain, several good MINES OF IRON, ZINC, LEAD, and COPPER can be BOUGHT for a MERE NOMINAL SUM. As an investment these will pay handsomely with a little keeping.

Address, Mr. Woods, Santander, Spain.

#### TIN MINE.

SYNDICATE WANTED for an EXTENSIVE and most valuable MINING PROPERTY, in a district proverbially rich for metallic ores. The adjoining mines (several of the lodes of which pass through this property) have realised profits amounting to between one and two millions sterling.

Address, "Tin Mine," MINING JOURNAL OFFICE, 25, Fleet Street, London.

BARYTES (SULPHATE OF), CRUDE OR GROUND, FOR SALE.  
Apply to FORCE CRAG LEAD AND BARYTES MINING COMPANY, 69, Close, Newcastle-on-Tyne.

#### TO INVESTORS.

MESSRS. KINGSLEY AND CO., of 10, SOUTH CASTLE STREET, LIVERPOOL, invite capitalists to apply for information for Investments only of a bona fide character.  
Messrs. KINGSLEY and Co. simply act as Commission Brokers for the public; and, whilst they do not either offer impossible returns for large or small outlays, they give their conscientious opinion on every query placed before them. They have loads of prospectuses of bubble companies of all descriptions placed before them, they do not anticipate a very hearty response to this advertisement, but they do hope, by strict attention to business of an honourable character, that they will eventually secure some portion of the public patronage.  
All business letters should be addressed to, and will be treated confidentially by, Messrs. KINGSLEY and Co., 10, South Castle-street, Liverpool.



### Notices to Correspondents.

\*. Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

Sir,—Replying to your "Anti-Tallow Candle" correspondent of the Journal of May 16—Mr. Henry Newall, of Ducie-buildings, Bank-street, Manchester, supplies the miners' lamps he is in quest of, and I dare say will be happy to send him all particulars.—JAMES G. GREEN.

Sir,—Will you kindly allow me to ask any of your correspondents, managers of mines, whether the following instrument would be useful—an instrument simple in character for sending written communications from the top of the shaft to the bottom, or from the bottom of the shaft to the top; that is to say, while the person is writing at the top of the shaft the instrument would be writing at the bottom; and, on the other hand, while writing at the bottom it would at the same instant be writing at the top? I wish to know whether such a mode of communication would be useful, as I have doubt it could be accomplished.—P.

DISCOVERY OF MERCURY NEAR EXETER.—Mention was made in the Journal two or three weeks ago that mercury had been found in shale beds near Exeter. I have looked carefully for a further notice about it, but have not so far seen any. If any of your correspondents would give an explanation of the strata in which it is said to have been found, and any other particulars, I feel quite sure he would confer a great favour on every mineralogist in the kingdom who lives too far from the spot to examine for himself how far such a representation is true?—MERCURY, May 27.

COSTA RICA.—On April 5, 1873, a very favourable report was published of a company called the Costa Rica Gold Mining Company. Are you aware that from that time to this nothing has been done in the matter? True one meeting was called, when those present were told that Mr. Robinson's report was all wrong, and that the works he reported upon were worthless. The writer took shares on the favourable report of Mr. Robinson, and also because Mr. Pontifex was chairman. It is now twelve months since my money was paid, and, as I can get neither information or scrip or money back, I think I am justified in publicly calling upon the directors to account for their extraordinary conduct; at any rate, to draw public attention to the case.—A. V.

LIGHT FOR MINERS.—I notice in the Journal of May 20, 1871 (p. 438), a reference to an improved lamp, by Messrs. J. Couper and Richardson. Could any of your readers kindly supply their address, or the address of makers of lamps as used in Scotch mines or on the Continent, where I am informed a greater and more economical illumination is obtained by lamps than in the Cornish mine practice of using candles? I find but one lamp-maker in your advertisement columns.—J. T. R.

MINING NEGOTIATIONS.—"Oporto."—The matter referred to is one upon which we can give no advice. If after the abrogation of the provisional contract with "T," at the instance of "Four Friends," the conclusion of the business was made dependent upon the report of their engineer, and his report was "not sufficiently satisfactory to induce their friends to entertain the matter in a way to yield any benefit," the affair might fairly be considered to have fallen through. But it is to say the least, ungentlemanly and unbusiness-like of the "Four Friends" not to have written at once in explanation, and forwarded copy of engineer's report, together with all papers and documents furnished by "Oporto." The mere fact of an engineer being recommended by the Royal School of Mines does not affect the case one way or the other, and the reports of gentlemen so recommended, who are usually scientific rather than actual miners, have but little weight with capitalists or the public, who place more confidence in practical men who have had real experience in mines. The best course to adopt is to make formal application for copy of report and documents through the London agency of some Oporto house, or through the agency of a London house doing commercial business with Oporto.

PAPYROGRAPHIC WRITING.—"D. A." (City).—The method is no doubt ingenious and interesting, but is not likely to come into general use, owing to the careful and delicate manipulation required. It consists in varnishing blank paper with resin dissolved in spirits of wine; the writing is then done on the unvarnished side with caustic alkali, and the texture of the portion of the paper injured is washed out with water, and the paper then used as a stencil plate—a persalt of iron being used beneath it, and the paper to be printed on being damped with a solution of prussiate of potash. The former oozes through the stencil-plate, and forms Prussian blue where it touches the potash salt.

DYNAMITE AND LITHOFRACER.—"J. P." (Par Station).—The Briti Litho Dynamite Company of Glasgow is the only company we know of. The London representative of lithofracter is Mr. Nourse, of Westminster Chambers, Victoria-street.

Received.—"S. J. R."—"M. E."—"G. H. H."—"Oporto."—"H. D. H."—"J. M."—"Reader" (Bristol).—"B. J."—"P. R."—"G. H."—"Shareholder" (Wheal Crebor).—"Cocker." Curious, but quite fallacious—"Shareholder" (Lovel) should apply at the office for the required information—"N. T. W."—"Inventor" (Manchester): We could not publish the letter without the writer's name being appended.

## THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, MAY 30, 1874.

### THE MINERS' WAGES QUESTION.

The wages question in our mining districts is now assuming a very serious aspect, and at the present time there cannot be less than 50,000 persons on strike in opposition to the reduction proposed by mine owners in consequence of the marked decline in the price of coal and iron. Unfortunately, the disputes are not confined to one locality, but prevail in several of our most important mining districts, and are extending into others that were expected to accept the employers' terms. In very many instances the leaders of several of the workmen's association have recognised the justice of a reduction of wages, but they cannot induce the bulk of the members to adopt their views. This has been the case in Scotland, where the sound advice of Mr. MACDONALD has been repudiated. The result is that it has been resolved to "lift" the whole of the funds of the Miners' Association for the support of those who are on strike, whilst a considerable number of the men in one district having been evicted from the houses they occupied under the late employers, are now with their families herding together in tents. How the dispute will terminate may easily be divined, for with the exhaustion of the accumulated capital, which will not take a very long time, there will follow misery, want, and degradation, and ultimately a resumption of work, in all probability, on worse terms than those which had been struck against. It is, no doubt, very unpleasant for men who have for a couple of years been luxuriating in wages double what has been received by the most skilful of our artisans to submit to a reduction of some 10 or 20 per cent. But, at the same time, the fact should not be overlooked that the miners' wages increased *pari passu* with the advance in the price of coal, and it is only reasonable to expect that the decrease in the value of one must be followed by a corresponding decrease in the other. But this is what the workmen will not see. Since the early part of 1872 they have basked in the sunshine of such unexampled prosperity that they cannot think of giving way, and conform to the great change that has taken place, and which must be shared in by them as well as by their employers. Sooner than this, however, the men will do almost anything, and, looking only to themselves, prefer working only four or five days a week, in the expectation that by so limiting the output they will keep the price of coal up to a higher point than it now is.

To carry out that selfish policy, only this week some 3000 men have struck in Durham, so as to compel the masters to work their collieries only five days a week. The ironstone miners in the adjoining county are also out against a reduction of wages, rendered necessary by the great decrease in the price of both iron and ironstone. The consequence is that a great many furnaces have been blown out, and those who have been working at them are thrown out of employment. In Staffordshire the strike of colliers causes some thousands of both miners and ironworkers to be idle. The former are supported by a weekly levy on the members of the Amalgamated Association of Miners. The executive of that body are, of course, in a great measure responsible for the throwing out of work some 25,000 people. But an equally serious calamity is probable in a district which for a long time past has been free from any extensive strike or lock-out. In connection with the South Yorkshire and North Derbyshire collieries there is a very powerful association, to which nearly all the men belong. Its strength is about 24,000, with a fund of about 40,000*l.*, of which 11,000*l.* has recently been paid towards the purchase of a colliery. The colliery owners in the districts named a short time since gave the men notice of a reduction of wages to the extent of 12½ per cent. This the men have refused to concede, and have even taunted their leaders with being in the pay of the employers, because they pointed out the change which had taken place in the coal trade, and the duty of the men to submit to a reduction. After a great deal of trouble, however, a majority of delegates from the various collieries, at a meeting held on April 22, agreed to a reduction equal to 6½ per cent. on the gross earnings.

But even this has been repudiated by some thousands of the men, who have asserted that the delegates, who in many instances voted for the reduction, had exceeded the powers vested in them. But the employers of South Yorkshire and North Derbyshire—or very many of them at least—have asserted that they cannot entertain the concession proposed by the men, which is less than that offered by any other district.

The actual increase in the wages paid to the men belonging to the association we have alluded to, since the close of the year 1871, has been 57½ per cent., whilst the price of coal since the last advance was made to the colliers is nearly 50 per cent. Under such circumstances it will be evident that the offer of the men is too ridiculously contemptible to be entertained. It is, therefore, not unlikely we shall see a serious struggle in some of the hitherto most prosperous mining districts in the country. But the men will do well to note the great change which has taken place in all that relates to mining, as well as in the important industries in which coal forms the most valuable ingredient. They should also look to the rapid development of our coal fields now going on, for there cannot be less than from 400 to 500 collieries now in course of sinking throughout the kingdom. When those new concerns are opened out there will, undoubtedly, be a much larger quantity of coal thrown into the markets than will be required, so that competition will be very keen, and prices probably as low as they were three years ago. We may say that, taking the 10 years up to the end of 1872, the production during that time had increased about 48 per cent.; but at the rate we are now proceeding it will be equal to from 15 to 20 per cent. per annum. There is another feature, also, in connection with wages disputes that should not be overlooked; that is, the great impetus which strikes in many trades have given to the introduction of machinery. That coal-cutting machines can be worked to great advantage is an accomplished fact, and we find that the strike in Scotland has already led to their more general adoption, for the Messrs. BAIRD, of Gartsherrie, have now some six or eight at work, and are engaged making several others. With these facts in view, it will be evident to the most ordinary mind that the miners will have to submit to a much larger reduction of wages than they are now asked to do, and that before very long.

### CAPITAL AND LABOUR IN AMERICA.

The superior intelligence of the working men of the United States, as compared with those of the Old World, is acknowledged by all writers capable of forming an opinion on the subject, whilst their skill in their own particular trades is evidenced by the enormous number of useful and ingenious contrivances—invented for the most part by working mechanics—which have been introduced for avoiding excessive toil and performing various work for which manual labour was previously considered indispensable; so that the appreciation which they are beginning to show for the necessity of ridding themselves of those who live by fomenting discord between them and their employers is well worthy of the consideration of the working classes of this country. It may be accepted as a fact that capitalists are seldom indisposed to pay the fair value for labour, provided the same rate be paid by those of their neighbours with whom they have to compete, and it is equally certain that the ultimate result of the efforts of the agitators to secure uniformity of price throughout the country, or even throughout a large district, must be to injure both employers and workmen. The tendency of Unionism is to replace piecework by daywork, and the latter system renders it in many cases absolutely impracticable to distinguish in fixing the wage to be paid between the most skilful mechanic and the merest dummy who may have gone through the formalities which entitled him to claim membership of the trade in which he is engaged. For this reason it becomes necessary to pay upon an average, which is unquestionably prejudicial to all the men most entitled to respect and consideration, and advantageous only to those who, from being incompetent workmen, are receiving more than their services are worth.

In many branches of industry it is alike difficult to fix an invariable standard for the payment of the workmen, whether by piecework or daywork, although the different quality of the work done by the different hands can be instantly recognised by everyone in the trade; it is, therefore, essential that entire freedom of contract should be allowed in order to enable every workman to secure the full reward to which his skill entitles him. Considerable inconvenience has recently been caused at the Cambria Ironworks, in Pennsylvania, in consequence of a movement made to organise a strike, but as soon as it became known to the company that the step had been determined upon, all hands were promptly discharged, and the works closed, the result being that after some weeks of idleness the men resumed work under a set of rules and regulations which will effectually relieve the employers of any further trouble with them, and at the same time secure to each workman a proper appreciation of his skill and industry. Everyone employed binds himself to conform to the rules, and as these are not only submitted to the men at the works, but published in the local newspapers, no one can plead ignorance of them, or have any excuse for complaint after he has accepted employment under them. The rules provide that the general manager shall have full and complete authority and control in every department, and to him superintendents and foremen are to make reports and returns as required. Contractors are to work under the superintendent or foreman, and they and their employees are to be subject to all the rules and regulations governing the immediate employees of the company. The time and manner of doing all work paid for by the ton or piece is to be regulated by the foreman under whom the work is done. A fortnight's notice must be given. Superintendents, foremen, and contractors are to be fined from \$1 to \$5 for failure to report names of men discharged for dishonesty, drunkenness, insubordination, &c. The time and manner of payment will be governed by the general condition of business, and any change will be duly announced.

With regard to Unionism, it is provided that any person or persons known to belong to any secret association or open combination, whose aim is to control wages or stop the works, or any part thereof, shall be promptly and finally discharged. Persons not satisfied with their work or their wages can leave honourably by giving the required notice; and any person or persons quitting work, or inducing, or attempting to induce, others to quit work, other than in the manner prescribed in these rules and regulations, shall forfeit whatever may be due or owing to such person or persons absolutely. Neglect and bad workmanship are met by the regulation that any person going to his work intoxicated, or absenting himself from work without having previously given notice and obtained leave, will be discharged or fined at the option of the company. Any person failing to do his work in a proper manner, or failing to do a satisfactory amount, may expect to be dismissed whenever it may suit the convenience of the company. Quarrelling or rioting about the works is punished by fines of from \$5 to \$10, or by the discharge of the offender, who may also be prosecuted for violation of the law. All collections made of fines and penalties under these rules, other than those imposed for damages to property of the company, will be set apart and reserved for the relief of such workmen as may become disabled by accident or sickness in the service of the company. It being understood that the money will be distributed to the disabled workmen of the same department from which it was collected as near as is practicable.

After rules providing against the destruction or injury of the company's property, the stealing of coal, the unnecessary damage to the cottages, and the delivery of coal, it is provided that workmen in any department, taking or allowing others to work with them without the consent of the foreman under whom they are employed, will not be allowed for the work so done, and will render themselves liable to be discharged from the works. The superintendents and foremen are given full power and authority in their respective departments, and are hereby required to exercise the same to enforce these rules and regulations, and to impose fines and penalties for violations thereof. All fines and penalties so imposed shall be rigorously exacted unless upon full examination it shall appear to the general manager that justice has been done. In hiring, promoting, and discharging workmen, superintendents and foremen must regard only the interest of the company and the qualifications and merits

of employees. The work must be allotted with due regard to the skill and character of the men, and any superintendent or foreman known to be engaged or interested in any business which may improperly influence his conduct towards those under him, or who shall wilfully neglect or refuse to enforce any of these rules, be promptly discharged.

The rules appear to have been satisfactorily received, the general opinion being that if the rules protect the company against those who live by fomenting discord between masters and men, they also protect the men against their worst enemies—the partisans of the Unions; and for this enfranchisement from a pernicious and deluding subjugation to an authority which has often forced them to adopt a course fatal to their own best interest, all intelligent working men have reason to be thankful. We find nothing in the resolutions which even the Trade Unions are bound to respect, and if to maintain these rights they find it necessary to require the men in their own employ to withdraw from the Unions, they are but paying in their own coin those who for years have regarded the employment of non-Unionists as a sufficient cause for a strike. It is confidently believed that similar rules will ere long be adopted in all the principal American works, and it is probably the real working men themselves who must fairly be congratulated upon the results which will follow.

### COLLIERY ACCIDENT FUNDS.

An article which appeared a few weeks since under the above head in the *Mining Journal* appears to have created more than ordinary interest, particularly in those districts which were specially alluded to. It has also called forth a response from the co-trustee of a fund raised for the relief of the sufferers by an explosion which took place at the well-known Oaks Colliery so far back as 1847. The gentleman alluded to—Mr. E. NEWMAN, a West Riding magistrate resident in Barnsley, who is held in the highest esteem by all parties for his active benevolence, and whose practical sympathy with the suffering poor is known and appreciated throughout a wide district—informs us that he is the co-trustee of a fund we noticed in our previous article, the amount of which is now between 500*l.* and 600*l.* From the interest of that sum 5*l.* a year is paid to two charities. Now, we firmly believe that in no better or more trustworthy hands could such a fund be placed as in those of Mr. NEWMAN—and that is more than we should like to say with regard to the managers of some other similar funds—yet it is plain that the money subscribed so long ago is not being distributed exactly in the manner intended by the donors. And we would, with every respect for the high and honourable character of Mr. NEWMAN, suggest to him and his colleague whether they would not be justified in giving a portion of the surplus money raised for the relief of the sufferers by a colliery explosion to the unfortunate families at Morley who have been left entirely destitute, owing to a similar catastrophe. The money so given would at least go into a channel more closely connected with what it was subscribed for than either the charities of Buxton or Askerne.

The surplus of the Oaks Fund of 1866-7, we suppose, will remain in the hands of the five or six managers until such time as the leading subscribers interfere. Those men who have the control of it, and have shown so much selfishness with regard to the large surplus, are those who have given really trifling sums towards it, but they give away a large amount of sympathy in talk and in anything that costs them nothing. The Mansion House Fund, too, still remains in the same state as it has been. Applicants to the presumed treasurer of it are unheeded.

But there is likely to be a change with regard to some of these funds before long, for we are informed by Mr. MACDONALD, M.P., that, despite the obstacles thrown in the way, he purposes persevering in the bringing to light the many surplus colliery funds now in the hands of various parties, with a view to their disposal in such a manner as would most likely be in accordance with the wishes of the subscribers. We wish him every success in the matter, which is one of very considerable importance, for there is no reason why 16,000*l.* or 20,000*l.*, such as that at the Mansion House, should be allowed to pass out of notice.

### RAILWAY IRON IN INDIA.

One current feature in the history of the British iron trade is the satisfactory revival which has taken place this year in the demand for rails and railway matériel on Indian account. Thus, our shipments of railway iron to British India in the first four months of this year compared as follows with the corresponding shipments in the corresponding periods of 1873 and 1872:—

Month.	1872.	1873.	1874.
January .....	159	1517	3596
February .....	1422	1816	2557
March .....	1277	1277	2019
April .....	826	937	4383

Total .....

2723	5547	17,555
------	------	--------

A very satisfactory and progressive increase has, accordingly, taken place in the consumption of our railway iron in India in 1873 and 1874. The progress in the traffic upon the guaranteed systems, and the necessity of accelerating that progress by the construction of feeders and branches, has induced the Indian Government to undertake in good earnest the prosecution of the long-delayed Indian State lines. The demand for railway iron in India on maintenance account has also, probably, somewhat revived this year, purchases having, no doubt, been made sparingly for months previously, in consequence of the excessively high rates which have prevailed upon the English markets for various descriptions of iron. But, whatever may be the cause, it is clear that for the time being, at any rate, there is an excellent demand in India for our railway iron,—a demand which promises to exceed 50,000 tons for the whole of 1874, while the actual exports in the same direction in 1873 did not exceed 18,087 tons and in 1872 14,651 tons.

The policy of the Indian Government with regard to Indian railways has undergone a great change during the last three or four years. For many years—say, from 1856 to 1871—the railway policy of the Indian Government was a policy of guarantees of interest to private companies; and under this system British India was endowed with a network of great trunk lines, which have produced, upon the whole, considerable results. But this guarantee policy was found a faulty one in some respects. The principal defect of it was that while the Indian Government was directly responsible for the interest guaranteed to the Indian railway companies, it had not a sufficiently complete and immediate control over the expenditure of the capital which the companies collected from the public. No doubt that capital was expended honourably enough, but the question which the Indian Government had, after an experience of some years, to consider was whether it was laid out to sufficient advantage, and with sufficient economy. The Duke of ARGYLL decided this question in the negative; and, accordingly, we now find that the guarantee system has been abandoned, and that the Indian Government has resolved upon constructing new Indian railways, with its own superintendents and workpeople, and by means of capital raised at an interest of about 4 per cent. per annum. Under the 5 per cent. guarantee system, the Indian Exchequer—at any rate, up to and including 1872—had to make good about 2*l.* out of every 5*l.* paid in the shape of interest. The conclusion at which the Duke of ARGYLL arrived—and it is impossible to deny that it was a wise and prudent one—was that it was desirable, on the one hand, to construct the new lines of India at a somewhat cheaper rate, and, on the other hand, to endeavour to raise capital at 4 per cent., instead of 5 per cent., by means of direct State loans, instead of the guaranteed share or debenture capital of private companies.

It is clear that if by using lighter rails, and generally employing lighter works, the Indian Government can reduce the cost of rail-



way construction in India some 20 per cent., there will be no loss on the capital expended, if that capital can be raised at 4 per cent. per annum, and if the traffic on the new lines gradually opened is equal to the traffic on the existing lines, the business thus far developed upon the existing lines will be sufficient to pay the interest on the new capital. Upon this latter point there must certainly be some doubt. Upon the other hand, it is certain that the more and the more cheaply Indian railways can be made, and the more cheaply Indian railways can be made, the less will be the final loss which the Indian Exchequer will sustain. We have been at some pains to elaborate this problem, because it is upon its satisfactory solution that the whole future of Indian railway construction may be said to depend. We have taken the probable reduction in the cost of construction at 20 per cent., but it appears possible enough that this reduction will be largely exceeded, and that future Indian lines may be completed for two-thirds, or even half as much money, per mile as the mileage cost of the guaranteed networks already in operation. If the reduction in the first cost of Indian railways can be carried to 30 or 40 per cent., of course the risk of loss attending them will be greatly reduced, and the Indian Government will in them will be prepared to embark in still further railway extensions, which must absorb considerable quantities of rails and matériel.

**LIABILITY OF DIRECTORS.**—In the Roll's Court, on Thursday, Mr. Southgate, Q.C., and Mr. Russell Roberts, for the committee of shareholders in the West Cumberland Iron and Steel Company (Limited), moved, on short notice, for an injunction to restrain the company and the directors from paying a dividend, which has been announced and the directors on June 2, on the allegation that the same could only be paid out of capital. Mr. Fry, Q.C., and Mr. Ingle Joyce, on the other side, objected that the notice of motion had not been served on some of the directors; but his Honour thought that of little importance, for if the company should be restrained from doing any act, and the directors afterwards did it, they would undoubtedly be committed. The learned counsel then contended that the plaintiffs had not acted with sufficient promptitude, as the report of the directors recommending the dividend was published on Nov. 28, and the bill to restrain the payment of it was not filed until May 25; and thereupon the Master of the Rolls ordered the motion to stand over until the hearing of cause, observing that if the company paid a dividend out of capital the directors would unquestionably be held personally liable to make good the sum so paid, on the principle of *Salisbury v. the Metropolitan Railway Company*.

**PALACE CARS ON THE MIDLAND RAILWAY.**—Railway travellers may at last be congratulated upon the introduction into this country of the Pullman drawing room and sleeping cars which have so long been in satisfactory operation in the United States, that the better class of American travellers have learnt to consider them almost as indispensable as the railways themselves. It is to the Midland Railway, always foremost in the introduction of real improvements, that the honour of first adopting the palace car system is due, the company's advertisement, in another column of to-day's *Mining Journal*, announcing that on and after Monday, June 1, Pullman car trains will be run every week-day between London and Bradford, and London and Nottingham, and so as to serve Bedford, Leicester, Trent, Derby, Chesterfield, Sheffield, and Leeds. The great advantage of the new system in enabling commercial men to leave their homes at Sheffield, Leeds, or Bradford in the morning, reach London soon after midday, do their business in town, visit a theatre or other place of amusement, and be back in their own offices at six o'clock the following morning, after having had the benefit of a good night's rest. There can be no question that the system will come into as great favour in Europe as it has in America.

**COAL AND IRON IN THE UNITED STATES.**—In the course of last year the Cleveland, Columbus, Cincinnati, and Indianapolis Railway Company re-laid 73 miles of track—39½ miles with Bessemer steel, and 34 miles with new and re-rolled iron rails. About 8000 tons of rails will be required for the coming year. The Pacific Mail Steamship Company is paying from \$1 to \$5.50 per ton on purchases of coal made by it in San Francisco. The Watson Manufacturing Company of Paterson, New Jersey, has received four contracts for iron bridges from the United States of Colombia, South America. The last of the iron work for the Salaverry and Truxillo Railroad bridge over El Rio de Chim, in Peru, has been shipped. The total length of this bridge is 2296 ft., and the cost has been \$75,000 gold. Four schooners have been loading Virginia smelting coal at the wharves of the Chesapeake and Ohio Railroad Company for the State of New York. Two of these steamers are bound for Troy. The total shipment of coal from the Shenandoah region last year amounted to 1,355,079 tons, as compared with 1,006,914 tons in 1872. The production of the Schuylkill region in 1873 was 5,066,799 tons.

**GOLD IN VICTORIA.**—The reports of the mining surveyors and registrars for the last quarter of the year 1873, collected and issued by the mining department, show that the number of men employed in gold mining in the colony of Victoria was 50,595, of whom 13,528 were Chinese. There were 362 steam-engines, with a power equal to 9579 horses, employed in pumping and winding. The approximate value of the mining plant in the colony was 2,131,188; the number of square miles of auriferous ground actually worked upon, 1050; and the number of distinct quartz reefs actually proved to be auriferous, 3324. The estimated amount of gold obtained during the quarter was 297,576 ozs., of which 124,474 ozs. were from alluvial mines, and 173,102 ozs. from quartz mines. The quantity of gold exported was 267,579 ozs.

**MINING IN HONDURAS.**—The mineral wealth of Honduras is acknowledged by everyone acquainted with the country to be immense. The hills and mountains of the interior contain numberless mines of precious metals. The silver mines are said to be unsurpassed in the amount and richness of their ores, and it is believed that on the completion of the Inter-Oceanic Railway, when capital will be devoted to these mines to a much larger extent, they will be very greatly developed. Other metals, such as iron, copper, and lead are also abundant, and if they were adequately worked, would soon become extremely profitable. Coal, too, is found at various places in the State, and two large fields containing coal deposits are included in the lands which have been ceded to the railway company. The quality of the coal is usually considered good; it is easily worked, and in both cases it falls within a few miles of the line of the railway. There is also a bed of coal in the plain of Sensenti, department of Gracias, covering a large area, and 10 ft. in thickness. Generally speaking, with regard to the mineral resources of Honduras, good authorities concur in saying that it ranks first amongst all the States of Central America, and until recently mining has been the predominant interest of the country. In consequence, however, of constant civil wars, and the insecurity of property, mine after mine, however productive, has been abandoned, and the mining districts are strewn with decayed mining villages, whose proprietors have become owners of large grazing estates on which the miners are now employed as herdsmen. A few mining establishments are kept up still, but the operations are conducted on a very small scale and in a very rude manner. It is stated, indeed, that there are hundreds of mines scattered over the country abandoned and filled with water, whilst most of them could be profitably worked by the application of proper machinery; as, however, there are no roads over which machinery could be transported, many of them must wait the general development of the country before they become of value. Near the town of Tecuigalpa there are numbers of mines which still produce a considerable quantity of precious metal, although not one-tenth of what they formerly yielded. It is stated that these mines are quite comparable to the celebrated mines of Potosi, in Bolivia. Enterprise here would, it is believed, find its reward. Silver ores are the most abundant and valuable of the mineral products of Honduras, and notwithstanding the crude and expensive processes of working adopted, the mining is still profitable. The mines do not appear to be even worked to any great depth, and the owners have generally been obliged to abandon most of them before they had been carried to the depths where the richest ores are generally found. With regard to the copper mines, from the want of means of inland transit the production of this metal has been regarded as unprofitable, but with improved means of communication and the introduction of the most efficient system of reducing ores, a great future is anticipated for copper mines. Platinum also exists, but the mines have never been worked. Antimony, zinc, and tin have also been found in various combinations, and Mr. Gomez, a mining engineer, says "that it is easier to find mines than men to work them, and that if labour and means of communication existed these mineral productions might in a short time rival those of Mexico and Peru." It is also stated that the mountain of Aguila is a vast mass of pure and highly magnetic iron ore, some of which we learn has so large a percentage of metal that it is forged directly from the mine without undergoing the previous process of smelting. Astonishment is expressed that so little is made of the mineral wealth of Honduras, but the people, although in the most intelligent condition, have become so reckless and demoralised by constant revolutions that they will not work or do anything to make an honest livelihood. Such attempts as have been made have not been very successful, generally from the imperfect manner in which they have been carried out. A mining company in Honduras, to be successful, must not only study the richness of the ore, but also its means of transport to the smelting furnaces, which can only be established wherever wood, coal, or lignites are abundant. Again, it must have thoroughly

effective machinery for extracting the mineral from the earth, for drawing off, pumping out accumulations of water, and efficient means for exhausting the metal from the ore, either by smelting or amalgamation. It remains to be seen what capital and enterprise will do for Honduras in this respect.

**THE RATING OF LEAD MINES.**—Reference was made in last week's *Mining Journal* to a petition in course of preparation for presentation to the House of Commons with the object of securing an assimilation of the system of rating lead mines with that proposed for the rating of mines of tin and copper. The petition is now lying for signature at the offices of Messrs. WATSON BROTHERS, 1, St. Michael's-alley, Cornhill; and as the matter is one in which lead miners in all parts of the kingdom, and not alone those in Shropshire, are interested, it may be hoped that the movement will be well supported.

**THE LLYL HALL COAL, IRON, AND FIRE-BRICK COMPANY.**—These works, which are being rapidly developed, were on Monday last visited by the Earl of Airlie, Capt. Giffard, and the Chairman of the company, Mr. F. Bennock. They were conducted over the entire works by Mr. Clarke, their intelligent manager, and were greatly pleased with the progress that had been made in the various branches of the enterprise during the last three months. The railway is being rapidly pushed forward by the contractors, and will be completed in August. The fire-clay works are being doubled in size, whilst the sinking of the two pits simultaneously is making all the progress that could be desired. They have already passed through several of the upper seams which prove the lower, and they fully expect to cut the Two Yard seam in September, the Brassy in October, and the Main in December, and with the beginning of the year be able to turn out at least 100 tons a day, increasing month by month until they reach 500 tons daily. The water, which has proved such an obstacle to the working of several pits in the neighbourhood, is here under perfect control; their pumping apparatus is so effective that not only does it keep under the in-pour with ease, but could empty the whole, were the pit full to the brim, in 24 hours. Besides, the directors have wisely determined to "tub" both pits, and when this is completed, which will be in a few weeks, the sinkers will be working in dry ground, and the pumps may be withdrawn should such be thought desirable. It is gratifying to learn that the noble earl, who not only takes a lively interest in all industrial pursuits, but is a large shareholder in the company, expressed himself as greatly pleased with what he had seen; and after carefully comparing the so far actual expenditure with the original estimates, was surprised to find that, notwithstanding the increase of wages, the limits and reports as to cost had been strictly observed. His lordship laid great stress on the intention of the company to build nearly 100 cottages for their workmen on a piece of freehold land they have secured and paid for, feeling, as all men must feel, that to walk two or three miles to and from his work must exhaust much of a man's power and strength for labour. Having devoted several hours to examining the various works at Llyl Hall, his lordship and companions took a hasty view of the interesting ironworks of Messrs. Sparrow, at Ffrwd, before returning to Mold. All who take any interest in the development of industrial works in the neighbourhood—and who does not?—will be glad to know that men of influence and capital are more and more turning their attention to the rich mineral fields of Flintshire and Denbighshire, which are practically almost inexhaustible.

#### REPORT FROM CORNWALL.

May 28.—Once more we have to write that there is practically no change in the position of affairs. The copper standard has shown a slight improvement, but the tin standard remains where it was. Nevertheless the prices of shares generally, though the market has been quiet, keep fairly up; this is clearly due to the general concurrence of opinion that a substantial rise is near at hand—if the ordinary indications are at all trustworthy it must be. The American demand has slackened for awhile, but the gradual revival of trade in that country of which we hear must make it spring up again. So, too, the longer the dispute in the tin-plate trade continues the nearer it must be to its settlement, and plate stocks are getting so low that whenever the settlement does come (notwithstanding that America is learning to supply itself with that indispensable article) the manufacture will have to be exceptionally brisk. Add to this that the Australian advances continue remarkably encouraging from our point of view, and that the quantity of Australian tin is declared for the next sale is 50 per cent. less than that sold ten days since, and we have an outlook that is sufficiently encouraging.

We shall hear before long, it is likely, of some prosecutions as to unfenced shafts. There are still many in the west central district that require protection, and to these the Government Inspector, Dr. Le Neve Foster is directing his attention. The difficulty in some cases appears to be to fix liability. It is quite time that this matter should be dealt with. We have heard, and the statement though astounding appears to be based upon substantial authority, that in one way and another the average annual loss of life in the mines of Cornwall and Devon is actually greater than that in most of the colliery districts. Coal mining is supposed to be exceptionally fatal, and it is true that when a colliery catastrophe does occur it is frequently on a large scale—a scale with which Cornwall has nothing to compare except that awful catastrophe—utterly unavoidable—at East Wheal Rose, when the mine was filled by a water spout. The fatality of Cornish mining consists in the number of small accidents which make a formidable aggregate. No doubt, fire-damp apart, metal mining is a more dangerous occupation than coal mining, on account of the differing character of the wallings; but still a large number of the casualties that do occur must be classed under the head preventable.

An important decision to working miners has been given in the Stannaries Court in connection with the wages claims of the miners in Boscawen Down. These men's claims were ordered to be paid under summonses adjudicated upon by the Penzance magistrates. The Vice-Warden has decided that their priority as to wages does not apply to the costs incurred in enforcing payment. The question is a difficult one, and there is a good deal to be said *pro* and *con*.

The spring meeting of the Royal Institution of Cornwall has been held at Truro, under the presidency of the President—Dr. Jago, F.R.S. Dr. Foster, F.G.S., and Mr. J. H. Collins, F.G.S., have become secretaries of the institution. Dr. Le Neve Foster read a paper by Mr. J. H. Collins, F.G.S., entitled "Mineralogical Notes," which stated that—

"On many occasions garnets had been found in considerable abundance both in Cornwall and in Devon. They were rarely more than semi-transparent, sometimes quite opaque, and very seldom of good colour, but these deficiencies did not much reduce the interest with which they were viewed by scientific mineralogists. One of the specimens he had obtained was from the decomposed surface of a highly ferruginous trap rock which was worked for iron ore at Smallcombe, in Devon. The crystals were dark brown and had considerable lustre, but were only semi-transparent. A second specimen was from Huel Devonshire, near St. Agnes, the crystals being dark coloured and small, and a third specimen consisted of yellowish brown garnet crystals of considerable size, but these also were dull and nearly opaque. These were found about 20 fms. deep in Great Retallack Mine, and very similar specimens had been recently found at Gravel Hill Mine, in the same parish. Until recently he believed that no Cornish garnets had been analysed, but he had recently analysed those from Great Retallack, with the following results:—Silica, 41.70; peroxide of iron, 35.71; protoxide of iron, trace; manganese, trace; alumina, 3.20; lime, 18.52; water, 0.25; total, 99.38. They were, therefore, iron-lime garnets. Their hardness was about 6.5; specific gravity, 3.466."

After reading the paper, Dr. Foster said he regretted the absence of Mr. Collins, because he differed with him in saying that one of the specimens was found in the decomposed surface of a highly ferruginous rock. He had been to Smallcombe, and although it was true that he did not see the underground workings at the mine in question, yet from what he saw at the surface he should say that the specimen did not come from the trap rock. There was a large quantity of hornblende occurring with garnets and magnetic iron, and he thought this case was similar to those that occurred in Sweden, where these minerals were found together. He did not think there was a single instance of magnetic iron occurring without getting garnets and hornblende, and so far as he was aware, there was no reference to trap rock whatever.

The President expressed his belief that a closer union between the country societies could not be regarded as practicable.

From time to time a good deal of fun has been made at the expense of the ignorance of mining often displayed by outsiders. When, however, these outsiders are "out venturers" this ignorance may, and very often does, wear a serious aspect. Not long ago it is said a captain was asked at a meeting how deep the "sett" was; and on another occasion the use of windmills was suggested as the means of economising the more expensively originated power. Now, there certainly might be a good deal more done to save coals by the application of water-power than there is, but that windmills should be used in mining is, perhaps, rather more than we can hope. But the idea is not so absurd a one as it seemed. The difficulty of using windmills for mining lies in the fact that the power thence derived is uncertain and unreliable, but that windmills might be used much more than they are in the West of England is certain. For example, they might be adopted, as they are in the Fen Country, in connection with the draining of marsh lands, and possibly in connection with mining in raising or storing surface waters, or waters that had been brought to surface, at higher levels. All this, however, is quite experimental at present. The dangerous side to the ignorance of

which we have spoken consists in this—that persons who know so little about mining matters are not only very promising subjects for duping, but are equally unreasonable in their expectations and actions with regard to mines that afford fair ground for speculation. They rush in, as we have said on other occasions, where wise men never would go, and they rush out where wise people would stay in. This is the way in which confidence is shaken, and good bails ruined. We are convinced thoroughly that were mining better understood than it is mining enterprise would flourish with redoubled vigour from the concentration of effort in the proper direction that would ensue.

#### TRADE OF THE TYNE AND WEAR.

May 28.—The Coal Trade continues pretty good; indeed, the steam coal trade in Northumberland is very brisk, and prices of best steam coal have an upward tendency; 18s. per ton is readily obtained. All the pits near the Tyne have been working steadily. The Chemical Works on the Tyne have been again got to work, the men having accepted the reduction of 10 per cent., and a considerable business has been done both in imports and exports; the imports of esparto and ore from Spain have been large. It must be noticed that the export coal trade has shown great vitality; but, looking at the state of the principal coal markets on the Continent, this need not excite surprise, as coal is in great demand in France and Belgium, and prices there are rising rapidly.

The strike at the whole of the Thornley collieries still continues, and the men have received seven days notice to quit the houses they occupy. Short work has already been resorted to at many works in South Durham, owing to the strike of the Cleveland miners, and this will, no doubt, be carried out so far as to prove serious to the miners and owners of coking coal collieries especially, although large stocks will in many instances be accumulated. Large stocks of coking coal are often laid up, as the coal is not injured much by exposure, and the reduction of it to small is no objection for coke-making.

The sinking at Redheugh, Gateshead, has proved extremely fortunate so far, as at a depth of only 12 fathoms a seam of coal was found 33 in. in thickness, and a few days ago, at a depth of 25 fathoms from the surface, a seam was found 4 ft. 6 in. It is, however, not likely to extend far to the west, as the "wash," as it is called, extends to a depth of 140 ft. below high-water mark on the Tyne. This curious and extensive denudation, as shown by plans and sections in Messrs. Wood and Boyd's paper in the Northern Institute "Transactions," extends from about Wallsend, on the Tyne, considerably to the south of Durham, and the depth, or bottom of the bed varies considerably. This wash, of course, shows that at some period a chain of lakes had extended between the two points named, and subsequently, the space occupied by the ancient river and lakes has been filled by a deposit of clay up to the point where the River Team now flows. As a rule, this wash takes all the seams off over the whole route indicated above the Brockwell seam; there are some exceptions to this rule, but they are not important, and it is also remarkable that the seams lying entire under this wash, on the Tyne at any rate, vary much in section, and are, as a rule, much more disturbed by faults than the seams which lie higher in the series, but are taken off by the wash. This, we believe, will be taken as a fact, and the reason for such a curious fact can, perhaps, be explained by geologists. It amounts to this, that the best seams are taken off by the wash, and those seams lying below the same wash are, from some cause, unusually disturbed, and thus seriously deteriorated in value. The strike in Cleveland will, no doubt, last a few weeks, as only poverty and misery will cause the men to retreat from the position they have obstinately taken up.

The Iron Trade is, of course, in a most disturbed state. The price of pig-iron is nominally—No. 3, 75s. for early delivery. The most conflicting opinions are expressed at Middlesbrough as to the probable duration of the strike of the miners. Some people think that after this week's holidays the men will be anxious to start work, while others hold the opinion, which is most probable, that the men will stand out firm a few weeks, and that most of the blast-furnaces will be damped down, and a large number of men thrown out of employment.

The Northumberland and Durham Co-operative Mining Society having purchased a colliery at Monkwood, near Chesterfield, a meeting was held on Saturday, at Newcastle, to report progress. There was a good attendance. Dr. Rutherford occupied the chair, and in opening the proceedings stated that the society had now 2000 members, and 20,000l. subscribed capital, most of which was paid up. A new manager had been appointed to the collieries, and a largely increased output was expected. There was a fair market for the coal, and more could be sold than was produced; in fact, there were orders considerably in advance. The men appeared to be arriving at a better understanding of the principles of co-operation, and the committee had confidence in the success of the undertaking.

**AMALGAMATED ENGINEERS' ASSOCIATION.**—At the decennial Conference, held on Tuesday, in Newcastle-on-Tyne, the President (Mr. W. Newton, of the Mint), delivered his inaugural address. The society revises its rules at its decennial sittings, and Mr. Newton reviewed at length the progress of the society since its formation twenty-three years ago. Its members at present number 42,350, and the balance in hand is 220,000l. He described the constitution of the association as a pure republic, the principles of local government being most fully recognised. Referring to the wages question, he said the engineering trade had not been subject to the fluctuations experienced in some trades, in which advances of from 10 to 50 per cent. had been made, and in which reductions amounting to 25 per cent. were taking place. It was better steady to advance, as the engineers had done, than be subject to such fluctuations. When high wages prevailed men were apt to get into extravagant habits, which they could not get rid of when wages fell. It was better to have an average 40s. per week, than to rise from 30s. to 50s., and then fall back upon 30s.

**TRIBUTE-LETTING OF MINES.**—A correspondent of the *Newcastle Daily Chronicle* writes:—"I do not know whether it has ever occurred to the owners or miners of Cleveland to consider the possibility of introducing to that district any principle of operations other than that which has resulted in the present dead lock. But, considering that outside suggestions do on occasions prove valuable, perhaps one need not apologise for directing attention to a system that seems to have given mutual satisfaction to owners and miners elsewhere. In the quartz mining districts of Australia many of the mines are let on tribute, and Cornish miners with whom I have been associated have told me that the copper mines of Cornwall are almost generally worked under the same arrangement. The system, as it obtains in Australia, is simple enough. The mine is let to the miners for a specified term, subject to such conditions as shall ensure the efficient working of the same, and they pay to the owners such percentage or tribute on the yield of the mine during their occupancy as may have been agreed upon. The difficulty arises in determining the tribute, but, that being settled, the interests of owners and miners are identical."

#### REPORT FROM SCOTLAND.

May 27.—The Warrant Market improved on Wednesday last from 84s. to 86s., and remained steady on Friday, closing on that day about 86s. 6d. There is this week very little change to report; business was done on Monday from 87s. 6d. to 86s. 6d., and on Tuesday from 86s. to 86s. 6d., while to-day as high as 88s. 6d. has been paid, and that is the closing price. The shipping returns continue miserably small, and the general trade is in an unsatisfactory state. It does not seem probable that much improvement can take place until the colliers see the propriety of working at the rate of wages that will allow of iron being made without loss. The prices of makers' iron remain very irregular; we quote No. 1 G.M.B., 88s. 6d. to 90s.; No. 3, 86s. 6d. to 87s. 6d. f.o.b. here.

#### SHIPMENTS.

Week ending May 24, 1873.....	Tons 17,173
Week ending May 23, 1874.....	6,705
Decrease.....	10,468
Total decrease since Dec. 25, 1873.....	94,805
Imports of Middlesbrough pig-iron into Grangemouth:—	
For the week ending May 23, 1874.....	Tons 2,213
For the week ending May 24, 1873.....	1,293
Increase.....	919
Total increase for 1874.....	25,225

It is certainly very many years since the Scotch iron trade presented the peculiar features which it has recently assumed, and there are no immediate prospects of a change. We have fewer furnaces in blast now than we had last week, and the stock is being reduced to a point that in former years would have ensured a fabulous rise. This shows how deplorable the trade is, as well as the utter futility of the miners supposing they could influence prices by their ceasing to work. In fact, not by working, but by meeting in districts or in large masses, seems to be the new method by which the miners hope to secure a livelihood. They appear to have become quite indifferent to a wage which amounts to only 6s. per day, and will have none of it, greatly preferring the Union dole (when they



can get it), ejection, and camping out—wives and families and in-firm—in some fragile erection in open field, to the more kindly comforts of home and the permanent income of a substantial wage. This course they regard as the perfection of wisdom, and the direct means by which the employers will be compelled to grant them the desires of their heart. It would appear that the demand for Scotch iron has not been at so low an ebb for many years, and so the employers are damming down or blowing-out their furnace; awaiting the return of the tide, or the time when the workmen will accept of such terms as will enable them to proceed. As the trade becomes more hopelessly depressed the men are becoming more hopelessly unreasonable, and so the strike is extending, although the Airdrie miners have returned to their work.

Mr. Alexander Macdonald is taking advantage of the Whitsuntide holidays to look in on his old associates here; and at a meeting held at Maryhill, on Monday, he took occasion to assure his auditors that his recent obituary epistle—which had given such wide-spread offence—did not apply to them, as "they had always taken his advice." This was conciliatory, and had the desired effect. Mr. Macdonald is to address the Fife and Clackmannan miners, who are about to strike against a reduction of 1s. from their present wage of 6s. per day. The Dunfermline miners on Saturday gave notice of their intention to stop work at the end of the two weeks.

Although our shipbuilders are not complaining, and vessels are being booked every now and again, the orders for finished iron are of the most fragmentary description, and we have been informed that if makers would only go at their work earnestly for a week they could run off every order on their books. This, we think, can scarcely be the case, as makers are always complaining, and yet they are always working. They complain, also, of the unremunerative nature of their employment, and we believe this is a most justifiable cause of complaint, and perhaps the one that is deterring them from pressing forward orders on which there is no profit. There are always considerable shipments passing out of the Clyde when aggregated together, but if they are going without leaving a profit behind we might be as well without them.

The tank used by James Watt for his first steam-engine was sold last week in Port Glasgow for scrap iron.

Coals are not meeting with an average sale, owing to their high price, and the action of the sale coalmasters is not without blame in the matter. It is their fault that the ironmasters' men have been so long on strike, but they may have to yield yet, and reduce prices further, as the article is accumulating in various districts. The shipments from the Scotch ports for the week were 26,563 tons, against 34,814 tons in the corresponding week of 1873.

The Scotch mineral oil companies have had, on the whole, a profitless year, but we are glad to know that Young's Paraffin Light and Mineral Company will pay a dividend of 7½ per cent., leaving a balance of 1000%. The previous dividends were 6½ per cent. last year and 10 per cent. the year before.

**MINING EXAMINATIONS FOR THE WEST OF SCOTLAND.**—In accordance with the orders of the Home Secretary, an examination of candidates for certificates of proficiency within the district of the West of Scotland was held in Glasgow. The examiners were—Messrs. James McCread, mining engineer, Glasgow; Andrew Kirkwood M.C.G., Glasgow; and John Craig, Coltness Ironworks, New Mills. There were in all 70 candidates—47 in Class I, which was for applicants who had had five years' experience either as manager or as underground manager or overman, and had had during that time the charge of 75 men. In Class II, there were 23 applicants, and in it were included those above 21 years of age who had had two years' experience underground in any capacity, or who had served three years in a mining engineer's office, and had been engaged in the active service of pits and making plans, or who had been employed as mechanics at a mining establishment for two years, and had been, during the eight months immediately preceding their application, employed underground acquiring a knowledge of mineral workings. The examination lasted all day, and it is not expected that the result will be known for some days.

**PNEUMATIC GAS APPARATUS.**—A new apparatus for making gas has recently been introduced from America, by means of which great boon of civilization may be supplied in places where the more primitive modes of giving light have held undisputed sway, such as country mansions, schools, churches, mills, and buildings inaccessible from gasworks. The apparatus has been erected at Messrs. R. Laidlaw and Sons' East Milton street Works, where a number of gentlemen assembled to see it in operation. Briefly described, the apparatus consists of a tank, which, containing a liquid called "gasoline," the product of petroleum, is sunk underground to a depth of 4 or 6 feet at any convenient distance from the mansion proposed to be supplied, thus presenting no external appearance. The air is forced into this tank by a small cylinder or air pump, which produces noiselessly by means of weights and cord in a cellar or any convenient place adjoining. This operation of winding up, performed once or twice a week, is all the labour required for the production of gas. The air forced into the tank through pipes connected with it returns into the mansion in the form of gas. The flame given through a bat-wing burner has an illuminating power of over 200 candles. The gas is only produced as fast as consumed, and production ceases when the burners are shut off. The cost of the apparatus is only about one third that of an ordinary gaswork's plant, and the cost of the gas is about 4s. per 1000 feet. Every satisfaction was expressed with the working of the apparatus by those present.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

May 28.—This week in South Staffordshire, as in other manufacturing districts, has been almost entirely devoted to holiday pursuits, and the aspect of business has, in consequence, undergone little change since our last notice. The Coal Trade is disorganised by the great strike of miners, which does not afford much prospect of an early termination. Considering the greatly reduced out-put of fuel, there is no serious scarcity of supply, and prices do not show much change. Around West Bromwich thick coal (best) is selling at 21s., and lumps ditto at 18s. 6d. per ton. The Iron Trade shows, if possible, increased languor in the pig-iron branch, and another furnace has been blown out this week by Earl Dudley, reducing the whole number blowing in the district to 42, out of an aggregate of 153. The price of pig-iron is weak and irregular, common cinder being quoted 32. 10s. to 34. 15s., and all-mine 54. 10s. to 64. per ton, according to brand. The current transactions are of merely nominal extent. The finished iron trade is a degree steadier as regards the better classes of produce, the scarcity of stocks in the market having had the effect of stimulating the sluggish demand. The Earl of Dudley, Messrs. Barrow, and other leading firms, have made no change in their list quotations, but selling prices of ordinary sheets and plates are a degree firmer than recently reported. The competition of Belgian firms is not nearly so severely felt in this district as described a short time ago. A leading member of the trade declares his belief that no permanent improvement will be experienced until coal is reduced to 9s., puddling to 9s., best bars to 9s., and best pigs to 90s. per ton.

The South Midland Institute of Mining Engineers are this week on a visit, by special invitation, to the Duke of Sutherland's mines in the Highlands of Scotland. The party will be met at Bross by the Duke himself, and subsequently will receive a "Highland welcome" at Dunrobin Castle. Mr. Jones, the Duke's agent in Shropshire, accompanies the excursion as president of the Institute.

The quotation for local mining and manufacturing companies' shares on the Birmingham Exchange to-day include the following:—Sandwell Colliery Company, 500 sellers; Cannock and Huntington Colliery Company, 4 prem.; J. Bagnall and Sons (Limited), 7 sellers; Chillingham Iron, 6 buyers; Patent Nut and Bolt, 2 prem.; Patent Shaft and Axle, 5 prem.; and Birmingham Wagon, 17s. The tendency of the market is towards ease, but Sandwell and Huntington shares are exceptionally firm, the latter closing at an important advance on the quotations of last week.

The affairs of Mr. Jesse Siddons, Tividale Tube Works, Tipton, came before a meeting of creditors on Wednesday. The accounts showed total liabilities 7313s., and assets 566s. An offer of 2s. in 12. was unanimously rejected, and it was resolved to liquidate the estate by arrangement.

Messrs. James Hinks and Son (Limited), Birmingham, have just declared a dividend of 10 per cent. and a bonus of 2½ per cent., as the result of the past year's operations, besides carrying 5000l. to depreciation fund and 5000l. to reserve fund. A considerable enlargement of the factory has been resolved upon.

The Iron Trade of North Staffordshire shows, on the whole, a slight improvement upon our last report. Orders for puddled bars on American account, and for finished iron on account of the eastern markets, are coming to hand more freely than for some little time past. The stocks of pig-iron at the furnaces are unusually heavy. Coal is in good supply, although the pits are only doing two-thirds full work.

The rotary puddling-furnace put down by Messrs. R. Heath and Son have been abandoned, after having had a long and patient trial,

The Chatterley Company, at their Moss Colliery, Bucknall, have come upon a seam of hard mine coal, 4 ft. 2 in. thick, of superior quality, and adapted for blast-furnace purposes. The colliery covers upwards of 400 acres, and, as an addition to the well-known Bucknall seams, the new workings will be a boon to the district, where the want of coal has been often severely felt. Each pit is connected by branch lines with the Longton, Alderley Green, and Bucknall Railway, and in addition to the supply of local requirements there will be a large surplus for other markets.

An interesting presentation took place on Monday, at the Griffin Edge Tool Works, Horsley Fields, Wolverhampton, when Mr. Wm. Edwards, the senior proprietor, at the request of the directors, presented a beautiful illuminated address, and half-length life-size oil paintings of himself and Mr. Edwards. In their address the men say:—"The very handsome provision which you have made for our comfort, the honourable way in which you treat us, and the sincere interest which you manifest in our well-being—all enforce our undiminished gratitude." The presentation was made by Mr. George Parker, the manager of the works, who it was abundantly clear uttered the genuine sentiments of the work-people whom he represented when he spoke in the spirit of the extract just given from the address.

**SANDWELL PARK COLLIERY (West Bromwich).**—Telegram: Mr. Henry Johnson, the engineer, under date May 29, 11 A.M., says:—"Struck Thick coal yesterday, bored through it, and found it 6 yards in thickness; now engaged sinking through it; depth 418 yards."

**MORE EXPERIMENTS WITH BLAST FURNACE SLAG.**—Experiments in the Cleveland district have shown that blast furnace slag is capable of being turned by suitable machinery into cubes for building purposes. Mr. A. S. Hill, Q.C., M.P. for West Staffordshire, has found out that ground up and mixed with a small proportion of pulverised sandstone and cement, it can be used in a moist concrete state in the making of walls and floors, and that the operations in wall-building, for instance, can be carried on at the rate of about 18 in. in height per day. The interval is sufficient to allow the composition to set and acquire consistency. In this way Mr. Hill is building cottages on his estate at Oxley Manor; and, acting upon his suggestion, Mr. George Elliot, the well-known colliery proprietor, is understood to have in the same manner utilised blast furnace slag in the erection of some 200 miners' cottages. Earlier investigation by Mr. Hill showed that the mixture, subjected to heat, made excellent building cubes. Though Mr. Hill has to convey the cinders a considerable distance, yet his calculation is that his materials will cost him just one-third less than bricks. If the erections should be made near to the slag heaps, then, of course, the saving would be much greater. From all this there is reason to conclude that South Staffordshire—and indeed we may say all ironmaking districts—contains in its re-use cinders a building material of a cheap and durable character, eminently adapted for small dwellings. The erections are not only pre-eminently clean, but likewise fire proof, and impervious to damp. So lasting are the erections likely to be, that the leading objection brought against them is that if alterations should be needed it will be almost impossible to make them. It is understood that Mr. Hill was led to make the experiments by noting what is being done by the Peabody Commissioners in some of their recent erections.—*Birmingham Daily Post.*

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

May 28.—There has been but little work done during the first three days of the week at the collieries in Derbyshire. This, however, has scarcely been felt as a great inconvenience or loss, owing to the slackness of the trade, whilst at some places it has led to the clearing away of accumulated stocks. The demand for house coal for the metropolis has been very quiet for some time, and can scarcely be expected to improve now. The collieries are in a very unsettled state with regard to the proposed reduction of wages, to which a large number are strongly opposed. The delegates sent to the meeting at Barnsley from North Derbyshire, on Friday last, were in most instances understood to be opposed to any reduction whatever. But that they will have to submit to a much larger reduction than has been proposed for their acceptance does not admit of a doubt. At the lead mines there has been but little change, and, owing to the low wages paid, the Whitsuntide holidays have been over much earlier with them than with the collieries. The production of ore has at some few places rather increased of late, but in most instances it has been steady and rather uniform. There has been no decline of late in the make of pig-iron, although the demand for it, especially for Sheffield and the neighbourhood, has not been so large as it was. The foundries have been kept very well going, a great many pipes being sent from the Staveley Company's works, who have long been noted for that description of material. At Dronfield the malleable works of the Messrs. Lucas have been kept well going in spindles and light castings. The same is also the case with the Bessemer works at the same place.

There has been nothing to report from Sheffield so far as the work is concerned, for very little has been done. This is the reverse of being an actual loss, for in several branches of trade the men have been on short time, whilst in others there is no immediate push. The cutlery branches are still very quiet, and short time still prevails at several places. The Bessemer works are in a very healthy state, and Russia is once more a very good customer for rails, considerable orders having been received by some of the leading firms. The heavy plate mills have been kept very fairly going, but just now the demand for ship and boiler plates is not particularly active. At very few collieries did the men resume work before Thursday, so that there will now be plenty to do for the next fortnight at least, if only to make up lost time. The Nunnery Colliery, formerly worked by Mr. Huntsman, but which for a year or two has been in the hands of the lessor, the Duke of Norfolk, is under-told to have been purchased by a company, and will be transferred next month. The miners throughout the greater part of the South Yorkshire district are in a very agitated state, and are denouncing in unmeasured terms the policy of their leaders, who have recommended them to submit to a reduction of wages. Many of them state that they will make no concession whatever, so that there is every appearance of a struggle taking place between some of the men and their employers. The proposal of a reduction, equal to 6½ per cent. in the gross earnings of the men, to be made to the employers this afternoon at Barnsley, is not likely to be accepted by them, and the result in the event of such a resolution being come to would be a stoppage of work at the collieries until the men submitted. The prospects of the trade are, consequently, anything but cheering. As it is, business is very quiet, and the price of coal falling. On Tuesday there was a meeting of the South Yorkshire Steam Coal Owners' Association at the King's Head Hotel, Barnsley. No alteration was made in the price of steam coal, which is now 14s. per ton. House coal for some time has been in very moderate request, and the Barnsley seam can be purchased as low as from 10s. to 10s. 6d. per ton, and Silkestone for 13s. per ton at the pits.

**EXTRAORDINARY DEVELOPMENT OF THE YORKSHIRE COAL FIELD.**—The extraordinary activity now displayed in the opening out of new collieries on an extensive scale in all parts of the West Riding of Yorkshire is such as to far exceed anything of a similar character to be found in the mining history of the country. That this is really the case will be apparent when it is stated that Mr. Wardell, the Government Inspector of Mines for the county, in 1873 had notice that 30 collieries had been opened out, from which coal was being raised. In the same year he also received notice of 97 more that were about to be commenced, which, with 18 more of which he had received notice up to May, 1874, will make the number of collieries now being sunk up to more than 100. Many of these new collieries, it is estimated, will produce a daily average of 1000 tons. In 8 south Yorkshire shafts to the Barnsley or Nine-foot coal are being sunk from Sheffield along the entire length of railway, to a considerable distance beyond Barnsley. At several places, for the first time in the county at least, the Silkestone coal is being sunk to the Barnsley seam, the distance between the two being about 380 yards. The minerals on the estates of Lord Wharfedale are being opened out in several directions. In addition to a colliery of his own near Wortley, his lordship is the lessor of the coal being worked by the Wharfedale Silkestone Company, the Wharfedale Woodnor Company, the Messrs. Crack, and of a field of 1000 acres of the Thick coal, to which shafts are now being sunk at Carlton. To the south of Sheffield the Industrial Company are going down to the Silkestone coal, whilst the Kiveton Park Company are sinking at Norwood. Both coal and gas are being opened out at Stornington and Deepcar, and a new shaft is being sunk at Orgreave to the Thick coal, as there is at the Holmes, near Masborough. On the Manchester and Sheffield line large coal fields are being opened out at Woth, Wombwell, Houghton, Corton Wood, Hoyland, near Elsecar, Barnsley, Raugh, &c. About two miles from Barnsley the Barrow Hematite Company are opening out a vast field of Silkestone coal, the full extent of which may be calculated by thousands of acres. Most of the coal raised will be converted into coke for the works belonging to the company at Barrow, where there are some 14 or 15 blast-furnaces with at least 18 six-ton Bessemer converters, with rail mills, &c. In the Wakefield and Normanton districts sinking operations are being carried out to the Haigh Moor and other seams. In the Leeds and Bradford district there are about 40 new pits being opened out, but most of these sinkings are to thin seams, which are worked in connection with the limestones, of which the Bowling and Lowmoor Companies raise large quantities. Looking at the great increase in the output of coal during the last four or five years, it will be found that the productive power of Yorkshire has grown more rapidly than that of any other district in the kingdom. In 1868 the quantity of coal raised in the West Riding was 9,705,000 tons; in 1870 it was 11,545,000 tons; and in 1872 it was 14,576,000 tons, an increase in four years equal to fully 33 per cent. Last year, in all probability, the output would be close upon 16,500,000 tons. The greatest increase in the southern part of the district, particularly in the Barnsley division, in which there was raised—in 1867, 1,375,000 tons; in 1869, 2,750,000 tons; and in

1872, 3,458,322 tons. Thus the tonnage was considerably more than doubled in five years. In the Sheffield district the quantity of coal raised in 1867 was 1,220,000 tons; in 1869 it had fallen to 830,000 tons; and in 1872 it rose to 1,338,761 tons. In the Leeds and Normanton district the production was 2,225,000 tons in the year 1867; in 1869 it was 2,839,540 tons; and in 1872 it had increased to 4,177,000 tons. As it is expected that by the early part of the year 1876 nearly all the new collieries now being opened out will be in full work, the production of coal in Yorkshire in that year may be fairly estimated at 23,000,000 tons of coal. As the productive power of the country, so far as coal is concerned, is likely to be far greater than our requirements, so that prices must come down considerably lower than they now are, in all probability to what they were in 1871. Such a likely lowering of results of the large profits made by colliery owners during the last two years, and which led to so many persons embarking in mining operations. Miners' wages, it is needless to say, under such circumstances will also have to come down considerably.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

May 28.—The Whitsun holidays are extensively observed, and there has been very little work done since last Saturday. The probability is that nearly all the works will be little better than idle all the week. But few comments can, therefore, be made on the state of any of the staple trades. Orders for iron continue to come to hand very slowly, and it can only be repeated that it is not to be expected that orders will be given out until matters are settled between masters and men. The notices will expire at the end of the week, and it is still uncertain whether work will be resumed on Monday. The men have agreed to accept the 10 per cent. reduction, but they object to the terms in which it has been announced. In fact, the old grievance is cropping up, and that is the objection on the part of the men to a reduction by percentage. They argue that by this policy the basis of the wages rate is lessened, and they want the reduction taken off the ton, and not off the 20s. There is some ground for their complaint, looking at the matter technically; but if the wages question is ruled by the market it can make but little difference whether the reduction is made by percentage or otherwise. It is to be hoped, therefore, that neither masters nor men will allow a matter so easily remedied to cause a cessation of operations.

If, however, the men agree to go on working, it is difficult just at present to see, in many instances, where anything like full work can be found, orders for finished iron being so short; but the only hope is that, should strikes be avoided, and it be seen that masters and men will be able to agree, orders will begin to flow in more freely.

The Cyfartha Works are again at a stand still, the small order which was secured having been completed.

Matters in connection with the Tin-Plate Trade are not amended in the least, and there is little prospect of their being so. The lock-out continues, and the trade is so dull that masters are not in the least anxious to re-open their establishments.

The state of the Coal Trade is much about the same. The demand is sluggish, and stocks have been so large that the short supplies of this week have not been felt. The collieries have hardly decided yet whether to go on working at the reduction or not.

The work of the Wye Railway has been commenced at Tintern, the contract having been taken up by Messrs. Reid Brothers and Co., who have engaged to finish the part between Tintern and Monmouth by March 28, and the whole line from Monmouth to Chepstow by December, 1875. The work will shortly be in full operation, and there is little doubt that the contract will be finished in the specified time, as there will be but little cutting. There will, however, be a tunnel, 100 yards in length, near Trenowen Abbey, and another about 100 yards long at Ledbury, where a junction is to take place with the South Wales line. The Wye will be crossed twice, once opposite the Bell Inn, Ledbury, and again about a mile below Tintern Abbey. This line will, in connection with the line and Monmouth, complete the Wye tour by rail. The Wye Valley will run into Treg (Monmouth) station.

#### SOUTH STAFFORDSHIRE AND EAST WORCESTERSHIRE INSTITUTE OF MINING ENGINEERS.

An adjourned monthly meeting of members was held on Friday in the Geological Museum, Dudley. Mr. JOHN HUGHES, the vice-President, occupied the chair, and there were about thirty members present. Mr. Edwards Phillips, collierymaster of West Bromwich, was proposed as a member of the Institute. Mr. W. BLAKEMORE said the members of the South Midland Institute had received an invitation from the Duke of Sutherland to visit his vast mineral estates at Brora, in Scotland, and his Grace was to meet the party. He (the speaker) could assure the members that they were heartily welcome to join the South Midland Institute excursion. The members then inspected an old 13-inch rail, found in a disused working at the Baffley Collieries, Netherthorn. It was calculated that the rail must have been nearly 100 years old.

At the conclusion of the meeting the members proceeded to the Public Hall, where, under the auspices of the Institute and the Dudley and Midland Geological Institute, Mr. HENRY WOOD, F.R.S., F.G.S., delivered a lecture on "The Dawn and Development of Life on the Earth." Mr. JOHN FIELD presided. In opening the lecture contrasted in its duration the historic period of the world with its pre-historic. He said that written documents did not take them back more than 30 or 40 centuries, and stone inscriptions only 200 years more. He handed to his audience two small copies of the celebrated tablets containing an account of the flood brought from Nineveh, as a proof of this. But far beyond that short historic period there was one of which neither history nor tradition related anything, and that period must have been long lapses of ages, when the lower animals peopled the earth—animals whose life-history probably extended over tens of thousands of generations before man. Geology showed all that; for there was not a quarry or a chalk-pit but what had its lessons for the student of the science. The great storehouses of the former inhabitants of the earth were the sedimentary rocks which had been formed by the meteoric agencies wearing and tearing all portions of the earth above the ordinary crust of the globe, bringing about changing areas of depression and elevation—the former filled by the different oceans, and the latter forming continents. Thus it was easy to see why the fossils of animals were found in countries where the animals themselves were extinct. The continual changing of oceans and continents had brought about changes of climate; and sub-tropical plants once grew in Britain, as shown by the fossils of *Cycas revoluta*, which the quarrymen called birds' nests. The lecturer then reviewed the various strata, and explained their fauna and flora, tracing the gradual development of higher forms of life. Referring to the coal field and its vegetable origin, the lecturer said the vast beds of coal in that county were formed not by mighty oaks or palms, but a smaller class of trees; and pointed out that an enormous length of time must have passed to have allowed thick forests to grow and be submerged one after another to form the various beds of coal, which in Wales were 100 in number. The coal field measures also furnished a few forms of animal life. Mr. Henry J. Anson, of Dudley, having found a beautiful star fish; and in the Sandwell Park sinking he had found the tail of a scorpion, and had promised to find the body. The sinking, of which they wished to hear more, had been very rich in fossils. In that neighbourhood had been found a very beautiful species of spider, which now existed only on the coast of Africa. Passing on to the subject of world-building animals, the lecturer said the oldest known form of life was the *Eozoon canadense*, which was a vast area built up of minute shells, which were as fine as dust, and was even a lower form of life than the insects which built the coral reefs. He argued that each geological period was one of development and not re-creation. After the world-building animals came higher forms, and then the cuttle-fish species; then the crabs, then fishes, then saurians, then mammals, and then a fierce struggle for existence until man was born; then came the age of invention, from flint spear-heads to the steam-engine and telegraph system. In conclusion, Mr. Woodward urged upon his hearers to carefully note, when engaged in sinking or in mining, the fossils and the strata, and communicate their knowledge for the advancement of science.

Upon the motion of Mr. FRER (Stourbridge), seconded by Mr. FIELD, a hearty vote of thanks was passed to the lecturer, who briefly responded.

**MANCHESTER STEAM USERS' ASSOCIATION.**—The monthly meeting of the Executive Committee of this Association was held at the offices, Corporation street, on Tuesday—Mr. Hugh Mason, vice-president, in the chair—when Mr. L. E. Fletcher, chief engineer, presented his report, of which the following is an abstract:—"From April 25 to May 22 inclusive, 278 visits of inspection were made, and 605 boilers examined—417 externally, 5 internally, and 173 entirely; while in addition 7 new boilers were tested by hydraulic pressure, as well as specially ex-



mined both as regards their construction and complement of fittings, before leaving the maker's yard. During the above period the following defects have been met with:—Furnaces out of shape, 4; fractures, 12; blistered plates, 13; internal corrosion, 12; external rust, 8; internal grooving, 22; external ditto, 1; pressure of water, 1; total, 93 defects. Mr. Fletcher reported that two explosions of gas occurred during the month, the first that of a Cornish boiler, the other of a locomotive. In the first case happily no one was injured; in the second only the driver and fireman were killed, while another person was injured. Referring to the Blackburn explosion, he said:—"This explosion has already had a very beneficial effect in quickening boiler makers to look into their modes of construction, and has led many boiler owners to qualify their pressures. It is trusted that the verdict will promote the introduction of more highly ductile plates than have been hitherto adopted, accompanied with a judicious system of testing the quality of the material, and also the adoption of such modes of setting as will leave the boiler free to move and breathe, and at the same time lay it open to inspection."

**SOCIETY OF ENGINEERS.**—At the meeting, on Monday, a discussion will take place on Mr. Suckling's paper on "Modern Systems of Generating Steam."

**CORNWALL MINERALS RAILWAY.**

**OPENING FOR GOODS AND MINERAL TRAFFIC.**  
THE ABOVE-NAMED RAILWAY, in connection with the WHARVES and SHIPPING PIERS at the ports of PAR, FOWEY, and NEW QUAY, will be opened on MONDAY NEXT, the 1st of June. Rates, and particulars as to transmission of traffic, will be forwarded on application to the undersigned.  
J. C. RICHARDSON, General Manager.  
Par, Cornwall, May 27, 1874.

**MIDLAND RAILWAY.**

**INTRODUCTION OF PULLMAN CAR TRAINS.**  
ON AND AFTER MONDAY, JUNE 1st, a TRAIN of the celebrated AMERICAN PULLMAN DRAWING ROOM and SLEEPING CARS will be run by the Midland Railway Company between LONDON (St. Pancras Station) and BRADFORD, on week days only, calling at  
BEDFORD, LEICESTER, SHEFFIELD, and LEEDS.

The Up Train will leave Bradford at 8.30 A.M., and the Down Train will leave St. Pancras at 12.0 midnight.  
A Train will leave Nottingham for Trent at 10.55 A.M., to join the Up Train, and at 2.40 A.M. to join the Down Train, returning from Trent to Nottingham with passengers out of each Train immediately on arrival.  
The Trains will convey First, Second, and Third-class Passengers at ordinary rates, and First-class Passengers may avail themselves of the Pullman Drawing Room and Sleeping Cars, at a small additional charge, particulars of which may be ascertained at any of the Stations.  
JAMES ALLPORT, General Manager.  
Derby, May, 1874.

**GLASGOW AND THE HIGHLANDS.**

**ROYAL ROUTE, VIA CRINAN AND CALEDONIAN CANALS.**  
By Royal Mail steamer IONA, from GLASGOW at 7 A.M., and from GREENOCK at 9 A.M., conveying passengers for OBAN daily; and from GLASGOW to GAIRDOCH, ROSS-SHIRE (for Loch Maree), STAFFA, IONA, GLENCOE, MULL, SKYE, LEWIS, and WEST HIGHLANDS, see bill with Map and Tourist Fares, free, at Messrs. CHATTO and WINDUS, Publishers, 74, Piccadilly, London; or by post on application to DAVID HUTCHESON and Co., 119, Hope street, Glasgow.

**TO COLLIERY OWNERS, AND VIEWERS.**

**MR. GEO. SOUTHERN** (Son of Mr. Geo. Wm. Southern, H.M. Inspector of Mines), having a Business Connection with a Firm of Large Rope-makers, CAN QUOTE VERY FAVOURABLY for HEMPEN and WIRE ROPES, of the very best makes.  
Prices, and all other particulars, may be obtained on application to Mr. Geo. SOUTHERN, 11, Wentworth-place, Newcastle-on-Tyne.

**COHNE'S PATENT BEARINGS.**

**NOTICE.**—The PATENTEE has received from Manufacturers of all kinds so large a number of applications for particulars and prices of his PATENT BEARINGS that he begs to give public notice that a COMPANY IS IN COURSE OF FORMATION, and ARRANGEMENTS ARE BEING RAPIDLY COMPLETED for EXECUTING ORDERS.  
In the meantime all communications for Mr. COHNE, with reference to the bearings, may be addressed to care of—  
Mr. A. G. DITTON, Solicitor, 9, Ironmonger lane, E.C.

**IRON ORE ROYALTY.**

**VERY VALUABLE IRON ORE ROYALTY TO BE SOLD.**  
BY PRIVATE TREATY, in the DALTON district, adjoining mines proverbially rich for metallic ore. Several lodes pass through this valuable property, which have already great profits.  
Address for particulars, to "J. P. E. B.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

**RAILS FOR SALE,** in great variety of sections (perfect, slightly defective, and second-hand), 14 to 82 lbs. per yard. Also CHAIRS and the other NECESSARY FITTINGS.  
Apply to BREYER, RICHARDSON, and Co., Newcastle-on-Tyne.

**ON SALE,—MASSIVE CRUSHING MILL,** with two pairs of 24 in. rolls, in cast metal frames.  
Also, 250 yards of 1½ in. diameter IRON WIRE WINDING ROPE.  
Address, "X. Y. Z.," MINING JOURNAL Office, 26, Fleet-street, London.

**PREFERENCE SHARES.**

**THE DIRECTORS OF THE YORKE PENINSULA MINING COMPANY (LIMITED)** are PREPARED TO RECEIVE APPLICATIONS for the FIFTEEN PER CENT. GUARANTEED PREFERENCE SHARES of the company, created on the 28th instant.  
These shares bear a fixed preferential dividend of 15 per cent. per annum; the dividend for any year to be payable out of the profits of such or any succeeding year or years. They carry, further, the right to an equal *pro rata* participation with the holders of the ordinary shares of the company in profits remaining after payment of the said fixed preferential dividend, and the par value of the shares, as well as any arrears of the preferential dividend that may accrue, are repayable out of the entire assets of the company in preference and priority to any distribution of the realised value of such assets to the holders of the ordinary shares of the company.  
The shares are of £1 sterling each, 5s. per share payable on allotment.  
Further particulars, and Forms of Application, if desired, may be obtained at the offices of the company, No. 1, King's Arms-yard, Moorgate-street, London.  
By order of the Directors,  
29th May, 1874. C. GRAINGER, Secretary.

**ST. JOHN DEL REY MINING COMPANY (LIMITED).**  
Notice is hereby given, that the Directors intend, pursuant to the power reserved to the company to PAY OFF the OUTSTANDING DEBENTURES of the company on the 29th day of January next, after which date INTEREST will CEASE TO BE PAYABLE. Payment will be made on or after the above date at the company's bankers, Messrs. Williams, Deacon, and Co., 20, Birch lane, London, upon the delivery of the debentures duly endorsed by the holder.  
By order of the Board,  
JOHN HOCKIN, Managing Director.  
Dated the 29th day of May, 1874.

**THE NEWPORT ABERCARN BLACK VEIN STEAM COAL COMPANY (LIMITED).**  
Notice is hereby given, that the SECOND ORDINARY GENERAL MEETING of this company will be HELD at the company's offices, 9, Billiter-street, in the City of London, on FRIDAY, the 5th day of June, 1874, at One o'clock in the afternoon.  
By order of the Board, A. E. CLARKE, Secretary.  
Dated this 23rd May, 1874.

**GREENER AND ELLIS' IMPROVED FETTLING FOR PUDDLING FURNACES** is now in active operation at the SKERNE IRONWORKS, DARLINGTON, and LICENSES may be had for USING the PATENT on application to T. GREENER, STATION STREET, DARLINGTON.  
The improved yield and quality of iron produced, and the economy effected by the process, render its speedy universal adoption, in these times, a matter of necessity and certainty.—Darlington, January, 1874.

**CAPTAIN ABSALOM FRANCIS,**  
GOGINAN, ABERYSTWTH, MINING AGENT, ENGINEER, AND SURVEYOR.  
The great success which is attending the opening and working of the Mines in the counties of Cardigan and Montgomery, and the many properties placed at the disposal of Capt. ABSALOM FRANCIS, induce him to offer his services either to ADVISE, INSPECT, REPORT, or SURVEY, for Mining Companies or private shareholders.  
For terms, apply to Capt. ABSALOM FRANCIS, as above.

**MR. J. S. MERRY,**  
ASSAYER AND ANALYTICAL CHEMIST  
SWANSEA

**MR. CHARLES F. COLLOM,**  
MINING ENGINEER, INSPECTOR OF MINES, &c.  
TAVISTOCK.  
MANAGEMENT OF THE SOUTH DEVON FIRE-CLAY COMPANY.

Patentee of COLLOM'S PATENT REVOLVING FRAME for DRESSING TIN, AMALGAMATING GOLD, &c.  
INVESTMENTS IN MINES ARRANGED FOR CAPITALISTS.

**MR. R. PERCY ROBERTS,**  
FINANCIAL AGENT,  
90, ENGLISH STREET, CARLISLE.

**In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.**

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the SPEARNE CONSOLS MINE COMPANY.**—By an Order made by His Honor, the Vice-Warden of the Stannaries, in the above Matter, dated the 26th day of May instant, on the petition of David Wise Bain, of Portreath, in the county of Cornwall, Merchant, a creditor and contributory of the said company, IT WAS ORDERED that the SPEARNE CONSOLS MINE COMPANY be WOUND-UP by this Court under the provisions of the Companies Act, 1862.  
HODGE, HOCKIN, AND MARRACK, Truro.  
(Agents for S. T. G. Downing, Redruth, Solicitor for the Petitioner.)  
Dated Registrar's Office, Truro, May 27th, 1874.

**In the Court of the Vice-Warden of the Stannaries. Stannaries of Cornwall.**

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the SPEARNE CONSOLS MINE COMPANY.**—The Vice-Warden has, by an Order made in the said Matter, bearing date the 26th day of May instant, appointed CHARLES WILLIAM CLINTON, of Truro, within the said Stannaries, an Officer of the said Court, to be OFFICIAL LIQUIDATOR of the above-named company.  
FREDERICK MARSHALL, Registrar.  
Dated Registrar's Office, Truro, May 28th, 1874.

**VALUABLE MINE MACHINERY AND MATERIALS FOR SALE, AT NORTH ROSKEAR MINE, CAMBORNE, CORNWALL.**

**MR. T. T. WHEAR,** Auctioneer, Camborne, has been favoured with instructions to SELL, BY PUBLIC AUCTION, on Tuesday, the 2nd June, 1874, at Eleven o'clock in the forenoon, at North Roskear Mine, Camborne, the following valuable

**MACHINERY AND MATERIALS** thereon, comprising—  
ONE 70 in. PUMPING ENGINE, 10 ft. stroke in cylinder, and 8 ft. in shaft, with metallic piston; THREE 13 ton BOILERS, and one cast iron bob at surface.  
ONE 24 in. WINDING ENGINE, metallic piston, 6 ft. stroke; ONE 10 ton BOILER, iron cage, &c.  
ONE 25 in. WINDING ENGINE, 6 ft. stroke, 19 ft. fly-wheel, with wrought iron axle; ONE 10 ton BOILER, and whim cage for wire rope.  
ONE 16 in. ENGINE, 4 ft. stroke, with two fly-wheels; ONE 8 ton BOILER, gear for whim and iron cage, CRUSHER and SAW MILL attached.  
1 shears, 60 ft. high. 5 6 in. windbore.  
1 do., 36 ft. high. 1 7 in. do., for sinking.  
1 capstan, iron centre. 1 10 in. working barrel, 12 ft. long.  
1 do., oak do. 3 6 in. do., do.  
160 fms. 11 in. capstan rope. 3 6 in. do., 10 ft. long.  
17 16 in. pumps. 7 pieces 14 in. rods.  
28 14 in. do. 4 do. 12 in. do.  
28 14 in. do. 5 do. 11 in. do.  
24 12 in. do. 5 do. 8 in. do.  
25 11 in. do. 25 do. 7 in. do.  
3 9 in. do. 74 do. 6 in. do.  
8 8 in. do. 4 pairs caps and loops.  
83 7 in. do. 12 do. caps.  
23 5 in. do. 140 do. strapping plates, of various sizes, principally fagotted.  
1 16 in. pole. A variety of staples and glands.  
2 16 in. do. 4 do. rods and flange bolts.  
2 13 in. do. 4 underground balance bolts.  
1 7 in. do. 4 V bolts.  
2 14 in. do. 1 36 ft. water wheel, 3 ft. breast.  
2 surface balance bolts, with boxes.  
5 windies.  
3 shaft tackles for 12 ft. shieves.  
4 12 ft. shieves.  
2 6 ft. do.  
4 4 ft. do.  
3 3 ft. do.  
30 2 ft. do.  
4 18 in. do.  
15 18 in. coach wheels.  
15 tons bridge rails and other tram iron.  
1 weighbridge, to weigh 8 tons.  
50 fms. 1½ in. bucket rods.  
20 fms. 1½ in. do.  
Iron stave ladders; several pair of blocks, lifting jacks, and drop screws; 2 large iron bobs, with stools and braces; several pairs of scales and weights; viaduct, made of wood and best iron, in good condition; annis, rings, &c., for 24 ft. water wheel; a large variety of smiths' tools, and crane in smiths' shop, fitted with winch, plates, and taps, &c.; punching machine; a large variety of tools in engineers' shop, including 6 in. engine for working lathes, &c., slide and hand rests; carpenters' tools; 100 lots of old timber; office and account house furniture; sundry iron, chains, skips, kibble, plumber and top blocks, borers and borer steel, tram wagons, and every description of materials suitable for the working of an extensive and well appointed mine.  
The whole of the machinery and materials are of the best description, and may be viewed on application to the Agents on the Mine.

**THE CARWAY ANTHRACITE COLLIERY, SITUATE IN THE GWENDRAETH VALLEY.**

Near BURY PORT and LLANELLY, in the County of CARMARTHEN.  
**MESSRS. FULLER, HORSEY, SON, AND CO.** are instructed by the mortgagee to SELL, BY AUCTION, at the Auction Mart, Tokenhouse-yard, London, on Thursday, June 4, at One o'clock, in One Lot, a VALUABLE and EXTENSIVE ANTHRACITE COLLIERY, known as the CARWAY COLLIERY.  
PARTLY FREEHOLD and PARTLY LEASEHOLD, situate in the GWENDRAETH VALLEY, in the County of CARMARTHEN, with railway communication by a branch line from the Bury Port and Gwendraeth Valley Railway.  
The total area of the minerals is 512 acres or thereabouts, of which 589 acres 2 roods are leasehold, subject to various moderate dead rents and royalties, the remaining 223 acres 2 roods are freehold, and include surface lands.  
The colliery is now being worked, the output being about 80 tons per day. A survey has been recently made by Mr. Brunton, the eminent mining engineer, who reports that the quality of the coal is excellent; the quantity he estimates at from 25,000,000 to 30,000,000 tons of unworked coal, and the aggregate thickness of the seams about 55 feet. The coal at present is being worked by an inclined drift, but a pit is in course of sinking, called the Macgregor pit, which, when completed, will enable a very much increased output—estimated at 300 tons per day.  
A steam engine of the best description has been placed at the head of the pit, and also head gear for double cages. There is a very good stone quarry on the freehold portion of the property, many seams of ironstone and an abundance of fire-clay; 10 new cottages have been erected, 10 in course of building, and there are four wooden cottages.  
There is a considerable demand for the coal, both in England and also in France, much in excess of the present output; and by a judicious outlay in extending the openings a large profit would doubtless be realised to a purchaser.  
Particulars may be had of Messrs. VANDERBON, LAW, HARRY, and ASTON, solicitors, 23, Bush-lane, London; at the Auction Mart; and of Messrs. FULLER, HORSEY, SON, and Co., 11, Billiter-square, London, E.C.; from whom orders to view may be obtained.

**STAVELEY LEAD MINING COMPANY (LIMITED).**

**IN LIQUIDATION.**  
**MESSRS. JOHN McCLELLAND AND CO.** have received instructions from the Liquidator to SELL, BY PUBLIC AUCTION, at the Law Association Rooms, Cook-street, Liverpool, on Wednesday, the 17th day of June next, at Three o'clock in the afternoon, the LEASE of the STAVELEY LEAD MINE (which has an unexpired term of 21 years and above yet to run), together with the WHOLE of the PLANT, MACHINERY, and LEAD ORE at surface.  
The mine is situate within two miles of the Staveley Railway Station, Westmorland. The agent has instructions to show the property.  
The property is to be sold without reserve, and a plan of the mine may be inspected, and further particulars had, at the Offices of the Auctioneers, No. 5, Clayton square, Liverpool.

**IRON ORE MINE.**

**TO BE SOLD, BY PRIVATE TENDER, the CADEY CROOK IRON ORE MINE.** This Mine is in the neighbourhood of DALTON, and very near the Lindow Coal Property. It is 20 fms. deep, with a good lode of iron ore, worth over £7 per fathom at the present time. There is a "PORTABLE ENGINE and HORSE WHIM, with a good LIFT OF PUMPS, all in good working order.  
For any further particulars, apply to "J. B. L.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

**TO CAPITALISTS OR PROMOTERS DESIROUS TO MAKE MONEY.**

**TO BE SOLD, A COLLIERY ROYALTY IN NORTH WALES,** close to rail or shipping port; several shafts partially sunk; coal fully proved of four seams of good house and steam coals in an area of upwards of 400 acres of surface. It adjoins the West Mostyn Coal Field, just successfully launched, where other under seams (including Cannel) have been proved, in addition to the above, so that eminent engineers state that the available coal in this royalty may be 85 ft. thick. Present holder will arrange to SELL the ENTIRE to an INDIVIDUAL or COMPANY FOR WHAT IT COST HIM, dividing all profit made above, which, even in a normal state of the coal trade, must be large, certain, and safe. Surveys by eminent Staffordshire and Welsh engineers have already been made.  
Address, "Nil Desperandum," care Mr. Watson, 15, Fenwick-street, Liverpool.

**FINE OPPORTUNITY FOR MAKING A FORTUNE.**

**TO BE SOLD, PART or ENTIRE (former preferred) of a COLLIERY ROYALTY,** of about 170 acres, in NORTH WALES. The pit is sunk 40 yards deep to the seam containing the best description of Cannel. There are six other seams of good coal (the first being King Coal, only 14 yards under it) known to be beneath this seam. Its situation being half a mile from a railway station, and also admirably adapted for land sale, close to excellent roads, the working expenses, royalty, rent, and outlay small for a probable get in a few weeks of 400 tons daily at an almost fabulous profit, render the present undertaking a well worthy the immediate attention of capitalists, coal dealers, gas manufacturers, or colliery proprietors.  
Address, "Q. E. D.," care of Mr. Watson, 15, Fenwick-street, Liverpool.

**TENDERS ARE INVITED FOR THE PURCHASE OF A VALUABLE TIN MINE,** together with the LEASE of the SETT, the WHOLE of the valuable ENGINES, PLANT, patent DRESSING MACHINERY, BUILDINGS, and PITWORK, fitted in two shafts to the 150 fathom level, and complete underground rails and plant. The property is situated in a well-known district of Cornwall.  
The mine has been opened to a great extent, and has returned large quantities of tin, even on the workings since January last the sales of ore have more than paid working cost.  
Full particulars and orders to view will be given to principals or their solicitors on application to Mr. FREDERICK WARWICK, 25, Bucklersbury, London, E.C.

**TO INVESTORS.**

**TWO SPLENDID OPPORTUNITIES SUCH AS ARE SELDOM MET WITH**—the one, a COTTON SPINNING CONCERN, ready for IMMEDIATE WORKING, and stocked with the most VALUABLE MACHINERY, principally new—the other, a LARGE IRONMONGERY BUSINESS, at present and for the past 22 years in ACTIVE TRADE, and which has always realised very large profits—ARE NOW OFFERING.  
Bona fide investors only are invited to apply for interests therein. Adventitious investors, speculating with the object of receiving promotion money, will not be treated with.  
Those only who desire to secure a permanent income on a moderate investment need apply personally, or address by letter—  
MR. HALLAS, PUBLIC ACCOUNTANT, 32, FAULKNER STREET, MANCHESTER.  
Who will furnish the fullest information, and to probable investors furnish letter of introduction to view the properties.

**COLLIERY NEAR SHEFFIELD.**

**VALUABLE COAL FIELD,** comprising about TWO HUNDRED AND FIFTY ACRES of COAL of the BARNSLEY TOP HARD SEAM, 5 ft. thick, and about 70 yards from the surface, with four shafts ready sunk, can be SECURED on VERY FAVOURABLE TERMS. Distance about eight miles from Sheffield, with excellent accommodation by canal, rail, and road.  
For further particulars and to treat, apply to BUSHMEAD, WIGHTMAN, AND MOORE, Solicitors, Bank Chambers, George-street, Sheffield.

**FOR SALE, a HORIZONTAL HIGH-PRESSURE ENGINE,** 13½ in. cylinder, 24 in. stroke; HORIZONTAL HIGH PRESSURE ENGINE, 14 in. cylinder, 30 in. stroke; and a PAIR of GUN METAL PUMPS, 6 in. diameter, 12 in. stroke; also, a TUBULAR BOILER, up to 60-horse power, of Yorkshire plates throughout.  
Apply to W. T. HENDRY and Co., 2, Wilson street, London, E.C.

**CHINA-CLAY MINE.**

**FOR SALE, ONE-QUARTER PART, or a MOIETY, of an EXTENSIVE and VALUABLE CHINA-CLAY MINE,** in full work. Will pay 30 per cent. on investment.  
Address, "A. B.," MINING JOURNAL Office, 26, Fleet street, London.

**IMPORTANT TO MINE PROPRIETORS, ROAD CONTRACTORS, CEMENT MANUFACTURERS, &c.**

**FOR SALE, a FIRST-CLASS ARCHER'S STONE BREAKER,** as good as new, fitted with all improvements, travelling gear, elevators, screen, &c. No reasonable offer will be refused.  
For particulars, apply to MESSRS. MCKENZIE AND SON (Limited), Dawson-street, Dublin; or to Mr. E. H. PEARSE, Galway.

**FOR SALE (a bargain), with immediate delivery, a 30-horse power HIGH-PRESSURE HORIZONTAL ENGINE,** 25 in. cylinder, with 4 ft. 6 in. stroke, in good order.  
Apply "Secretary," Waterworks, Gosport.

**TO COLLIERY PROPRIETORS, AND OTHERS.**

**PIT SINKING.**

**FOR SALE, and ready for immediate delivery, a 14, 18, 25, and 35 horse power PORTABLE STEAM ENGINE,** with link motion reversing gear.  
WINDING DRUM, GEAR, &c., complete.  
Also, a 9-horse power VERTICAL ENGINE, with link motion reversing gear, suitable for mining operations.  
**FOR SALE,—An excellent PORTABLE STEAM ENGINES; and a 7-ft. PAN MORTAR MILL.**  
Apply to—  
BARROWS AND STEWART, ENGINEERS, BANBURY.

**FOR SALE,—ONE 50 in. cylinder PUMPING ENGINE, 10 ft. stroke in cylinder, 8 ft. in shaft, with ONE BOILER.**  
ONE 24 in. cylinder WINDING ENGINE, 8 ft. stroke, ONE BOILER and DRAWING CAGE, complete.  
Apply to Mr. WILLIAM LANGDON, Northumberland Foundry, Launceston, Cornwall.

**MINE ENGINES.**

**FOR SALE, a good 40-inch cylinder PUMPING ENGINE,** 10 ft. stroke in, 9 ft. out, with 10-ton BOILER; in first-rate working order throughout.  
A 15-inch cylinder WINDING ENGINE, with cage, complete, and 8-ton BOILER.  
The engines can be seen on the Great Work Mine, near Helston, Cornwall.  
For further particulars, apply to Mr. J. WALKER TRACKE, Solicitor, Helston.

**MACHINERY AND MINE MATERIALS.**

**FOR SALE.—**  
A 30 inch PUMPING ENGINE with BOILER.  
A 10 horse power PUMPING ENGINE.  
A 2½ horse power SEMI-PORTABLE ENGINE, on stand plate.  
A WATER WHEEL, 32 feet high, 3 feet 4 inches breast, with iron axle, centres, and ring.  
A WINDING CAGE.  
Apply to—  
W. TREGAY, REDRUTH.

**MINING MACHINERY.**

**MESSRS. F. W. MICHELL AND CO.** have FOR SALE several CORNISH PUMPING, STAMPING, and WINDING ENGINES, of different sizes: BOILERS from 6 to 12 tons each; PITWORK of all sizes; CORNISH CRUSHERS; STAMP AXLES; IRON FLAT-RODS; STRAPPING PLATES; and other MATERIALS in general use in Mines, &c.  
EAST CARN BREA, REDRUTH, CORNWALL.

**TO BE SOLD.**

**BEAM ENGINE, 16½ inch cylinder, high pressure or condensing** in good working trim, with foundation stones, complete.

**PORTABLE ENGINES, for SINKING, MINING, or GENERAL PURPOSES,** from 10 to 30-horse power, IN STOCK, or in PROGRESS OF CONSTRUCTION.  
Full particulars on application to—  
BADGER AND SON, ENGINEERS, ROTHERHAM.

**FOR SALE, OR HIRE, the following NEW or SECONDHAND PLANT and MACHINERY, in thoroughly efficient condition:—**

VERTICAL ENGINES.	
2 Vertical Combined Engines and Boilers .....	4½ in. cylinder.
1 ditto ditto ditto .....	5½ " "
1 ditto ditto ditto .....	6 " "
1 ditto ditto ditto .....	6½ " "
3 ditto ditto ditto .....	6½ " "
2 ditto ditto ditto .....	7½ " "
1 ditto ditto ditto .....	8½ " "
PORTABLE ENGINES.	
1 Portable Engine ... 5½ in. cylinder.	6 Portable Engines ... 9½ in. cylinder.
1 ditto ... 6½ " "	4 ditto ... 10½ " "
1 ditto ... 6½ " "	6 ditto 2-7½ in. cylinders.
3 ditto ... 7½ " "	6 ditto 2-8½ " "
3 ditto ... 8½ " "	3 ditto 2-9 " "
10 ditto ... 8½ " "	3 ditto 2-9½ " "
CRANES AND WINDING ENGINES.	
2 Steam Cranes for .....	30 cwt.
1 ditto .....	2 to 3 tons (Chaplin).
1 ditto .....	3 to 4 tons (ditto).
1 Hand Travelling Crane .....	3 tons.
1 ditto ditto .....	4 tons.
PUMPS.	
3 Chain Pumps .....	6 x 4 1 Centrifugal Pump .....
4 ditto .....	10 x 4 ditto .....
3 ditto .....	12 x 6 ditto .....
1 ditto .....	14 x 7 ditto .....
1 ditto .....	16 x 8 ditto .....
1 ditto .....	24 x 8 2 Contractors Pumps.
2 ditto .....	30 x 10 3 Deep Well Pumps.
3 Woodford's Pumps, double ...	4 inch. 1 Plunger Pump .....
2 ditto ditto .....	6 " 1 Bull Pumping Engine, 24 in. cylinder
MORTAR MILLS.	
2 Mortar Mills, with 4 ft. pans.	5 Mortar Mills, with 7 ft. pans.
4 ditto " 5 " "	5 ditto " 7 ft. 6 in. pans.
1 ditto " 6 " "	6 ditto " 9 ft. pans.
SAW BENCHES, &c.	
1 Bench, 4 ft. x 2 ft., with 24 in. saw.	
4 Benches, 5 ft. x 2 ft. 6 in., with 36 in. saw.	
1 Bench, self-acting, 5 ft. x 2 ft. 9 in., with 32 in. saw, by Powis.	
1 Wood planing Machine, by Robinson, 12 ft. x 15 in.	
1 Hand Mortising Machine.	
1 Grindstone Trough, for Moulding Irons.	

**SUNDRIES.**  
2 Blowing Fans, 12 in.; 1 Iron Pug Mill, 4' 4" x 2' 0"; 1 Punching and Shearing Machine, for ½ in.; 1 ditto ditto, for ¾ in.; 1 Crosscutting Cylinder, 66 ft. x ¾ plates. &c., &c., &c.

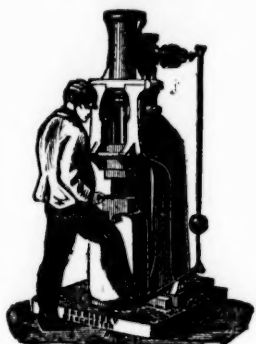
HENRY SYKES, 66, BANKSIDE, LONDON.



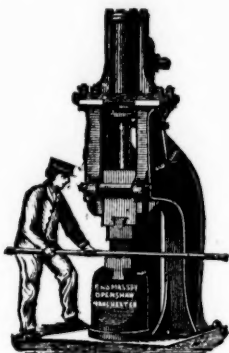
# B. & S. MASSEY, OPENSHAW, MANCHESTER.

PRIZE MEDALS AWARDED:—Paris, 1867; Havre, 1868; Highland Society, 1870; Liverpool, 1871; Moscow, 1872; Vienna, 1873.

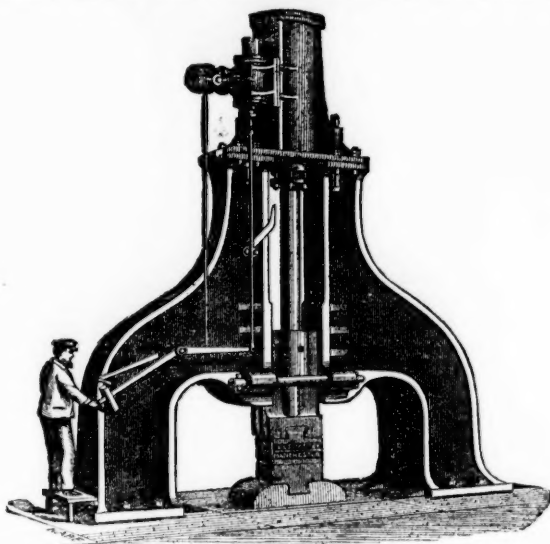
Patentees and Makers of Double and Single-acting STEAM HAMMERS of all sizes, from  $\frac{1}{2}$  cwt. to 20 tons, with self-acting or hand motions, in either case giving a perfectly DEAD BLOW, while the former may be worked by hand when desired. Large Hammers, with Improved Framing, in Cast or Wrought Iron. Small Hammers, working up to 500 blows per minute, in some cases being worked by the Foot of the Smith, and not requiring any separate Driver.



Small Hammer with Foot Motion.



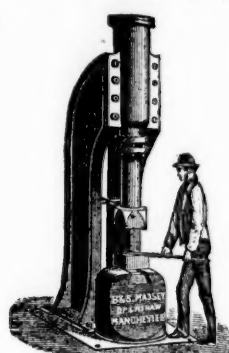
General Smithy Hammer.



Steam Hammer for Heavy Forging.



Special Steam Stamp.



General Smithy Hammer.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

SPECIAL STEAM STAMPS, of great importance for Forging, Stamping, Punching, Bolt-making, Bending, &c. STEAM HAMMERS for Engineers, Machinists, Shipbuilders, Steel Tilters, Millwrights, Copper-smiths, Railway Carriage and Wagon Builders, Colliery Proprietors, Ship Smiths, Bolt Makers, Cutlers, File Makers, Spindle and Flyer Makers, Spade Makers, Locomotive and other Wheel Makers, &c.; also for Use in Repairing Smithies of Mills and Works of all kinds; for straightening Bars, bending Cranks, breaking Pig-iron, &c.

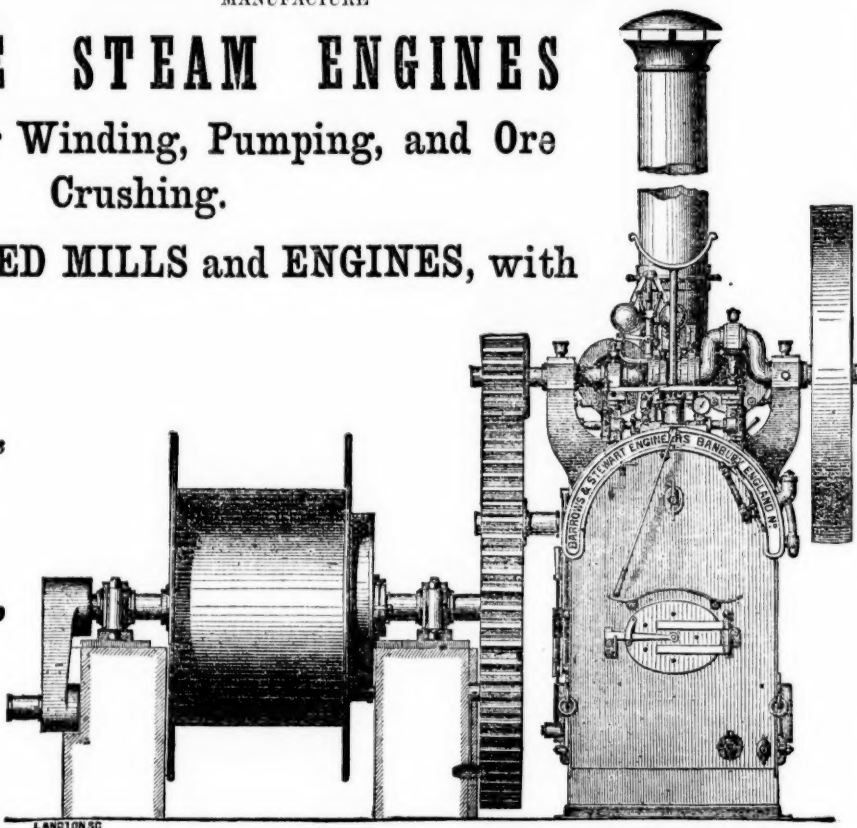
## BARROWS & STEWART, ENGINEERS, BANBURY,

MANUFACTURE

**PORTABLE STEAM ENGINES**  
With Gear for Winding, Pumping, and Ore  
Crushing.

Also, COMBINED MILLS and ENGINES, with  
or without

**BOILERS,**  
for Grinding  
Cinders, Sand,  
Mortar, &c.



## THE DARLINGTON ROCK BORER.

PATENTED IN GREAT BRITAIN, PRUSSIA, FRANCE,  
AND VARIOUS CONTINENTAL COUNTRIES.

Makes 300 to 1000 Blows per Minute, as may be required, without  
Valve or Complicated Gear.

DRIVEN WITH STEAM OR COMPRESSED AIR.  
SPECIALLY SUITABLE FOR RAILWAY, QUARRY, AND MINE WORK.

For price and particulars, apply to—

**JOHN DARLINGTON,**  
2, COLEMAN STREET BUILDINGS, MOORGATE STREET, LONDON.

## CHARLES PRICE AND CO'S PATENT RANGOON ENGINE OIL.



THIS OIL is suitable to every kind of Machinery; it is used almost exclusively in Her Majesty's Dockyards and Fleet, and by the War Office and East India Government; as well as by the Royal Mail Steam Packet Co., Pacific Steam Navigation Co., P. and O. Co., Cunard Co., and by most of the other important Royal Mail Steam Fleets in the kingdom. It is also extensively employed on the various railways, and by many of the leading engineering and manufacturing firms at home and abroad. "Chemical Laboratory, 7, Printing House-square, Blackfriars, April, 1869. "I hereby certify that the Rangoon Engine Oil, manufactured by Messrs. Chas. Price and Co., is free from any material which can produce corrosion of the metal work of machinery. It is calculated, indeed, to protect metallic surfaces from oxidation, and, from its peculiar character, is not liable to lead to spontaneous combustion of cotton waste or any similar material which might become imbued with it, as is the case with Rape, Gallipoli, and Olive Oils. The lubricating power of this oil is equal to Sperm or Lard Oil. T. W. KEATES, F.C.S., &c., &c., Consulting Chemist to the Board of Works."

Extract from Mr. BAXTER'S Speech in the House of Commons, May 31st, 1870:—

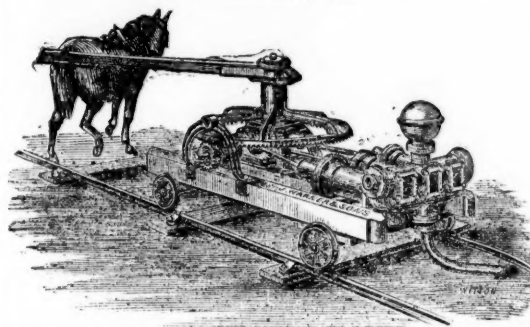
Chas. Price and Co.'s Rangoon Oil—"a vastly superior article" (speaking of Gallipoli Oil at £72 per ton)—"was obtained for from £40 to £45 per ton." Every parcel of the Oil sent from the Works bears the Trade Mark of the Firm, and as many spurious imitations of the Rangoon Engine Oil are sold purchasers are requested to observe that none is genuine which does not bear this mark.

Oil, Tallow, and Colour Merchants, Seed Crushers, Turpentine Distillers, &c.

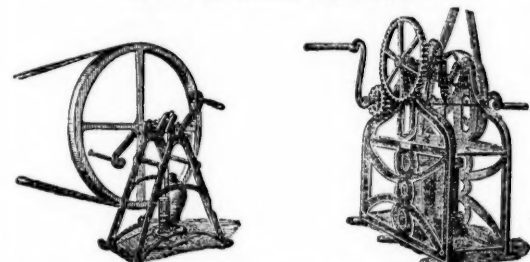
London: CASTLE BAYNARD, UPPER THAMES STREET, & MILLWALL, POPLAR.—Works: ERITH, KENT.

## JOHN WARNER AND SONS, HYDRAULIC & SANITARY ENGINEERS,

BELL AND BRASS FOUNDERS TO HER MAJESTY,  
Crescent Foundry, Cripplegate,  
LONDON, E.C.



**WARNER'S IMPROVED COLLIERY or MINE PUMP**  
for Horse or Steam Power,  
SPECIALLY ADAPTED FOR UNDERGROUND WORKINGS.  
Price Lists and Testimonials upon application.



PUMPS OF EVERY DESCRIPTION, for hand, horse, steam, wind,  
or water-power.

Full HYDRAULIC CATALOGUE upon application.

VIENNA EXHIBITION, 1873. See Award List.—TWO MEDALS  
and HONORABLE MENTION.

## JOHN AND EDWIN WRIGHT,

PATENTERS.  
(ESTABLISHED 1770.)  
MANUFACTURERS OF EVERY DESCRIPTION OF  
IMPROVED

PATENT FLAT AND ROUND WIRE ROPES  
from the very best quality of charcoal iron and steel wire.

PATENT FLAT AND ROUND HEMP ROPES,  
SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CON-  
DUCTORS, STEAM PLOUGH ROPES (made from Wedder and Horsfall's  
patent steel wire), HEMP, FLAX, ENGINE YARN, COTTON WASTE  
TARPAULING, OIL SHEETS, BRATTICE CLOTHS, &c.

UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.

UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM.

CITY OFFICE, No. 5, LEADENHALL STREET, LONDON, E.

WILTON'S MATHEMATICAL INSTRUMENT ESTABLISHMENT,  
REMOVED from St. Day to A. JEFFERY'S, CAMBORNE.

W. H. WILTON begs to thank his friends for their liberal support for so many years, and informs them that (having opened business at Valparaiso) he has now declined business in England in favour solely of Mr. A. JEFFERY, MATHEMATICAL INSTRUMENT MAKER, CAMBORNE, whom he considers (having been an assistant to his father for several years) is in every way capable of creditably maintaining the good name universally awarded to Wilton's instruments.

## A. JEFFERY

Respectfully begs to inform Mine Managers, Surveyors, Engineers, &c., that having purchased Mr. Wilton's business, and the very valuable acquisitions and appliances belonging thereto, he has enlarged his Mathematical Instrument Manufactory, and is prepared to supply THEODOLITES, DIALS, POCKET DIALS, LEVELS, TRAVERSING AND PLAIN PROTRACTORS, CASES OF DRAWING INSTRUMENTS, MEASURING CHAINS AND TAPES, ASSAYERS' SCALES AND WEIGHTS, ENGINE COUNTERS, and, in short, every description of Instruments used in Surveying, MEASURING, MAPPING, &c.  
Repairing in all its branches promptly attended to.

THE GREAT ADVERTISING MEDIUM FOR WALES.

**THE SOUTH WALES EVENING TELEGRAM**  
(DAILY), and  
SOUTH WALES GAZETTE  
(WEEKLY), established 1857.

The largest and most widely circulated papers in Monmouthshire and South Wales.  
CHIEF OFFICES—NEWPORT, MON.; and at CARDIFF.

The "Evening Telegram" is published daily, the first edition at Three P.M., the second edition at Five P.M. On Friday, the "Telegram" is combined with the "South Wales Weekly Gazette," and advertisements ordered for not less than six consecutive insertions will be inserted at a uniform charge in both papers.  
P. O. O. and cheques payable to Henry Russell Evans, 14, Commercial-street, Newport, Monmouthshire.



ECONOMICAL STEAM POWER GUARANTEED.

# THE GENERAL ENGINE & BOILER CO.

ESTIMATES ON APPLICATION AT 8, UNION COURT, OLD BROAD STREET, LONDON, E.C.

ELLIS LEVER &amp; CO.,

ORIGINAL MANUFACTURERS OF

## FLEXIBLE AIR TUBING AND BRATTICE CLOTH,

FOR THE

## VENTILATION OF MINES.

WEST GORTON WORKS,

AND 107, PICCADILLY, MANCHESTER.

J. W. STEAD,

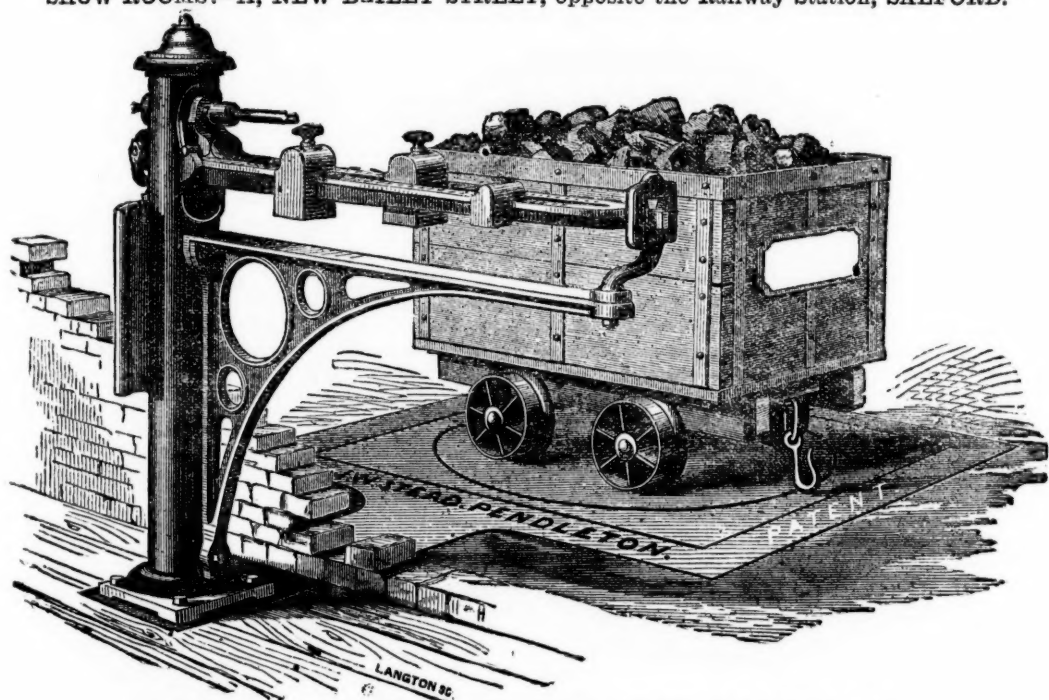
(Late of the Firm of HODGSON and STEAD),

MANUFACTURER OF WEIGHING MACHINES, WEIGHBRIDGES,

AND ALL DESCRIPTIONS OF WEIGHING PLANT FOR ALL NATIONS.

GLOBE FOUNDRY, PENDLETON, MANCHESTER.

SHOW ROOMS:—11, NEW BAILEY STREET, opposite the Railway Station, SALFORD.



NEW PATENT WEIGHING MACHINES, specially for Mining Uses.

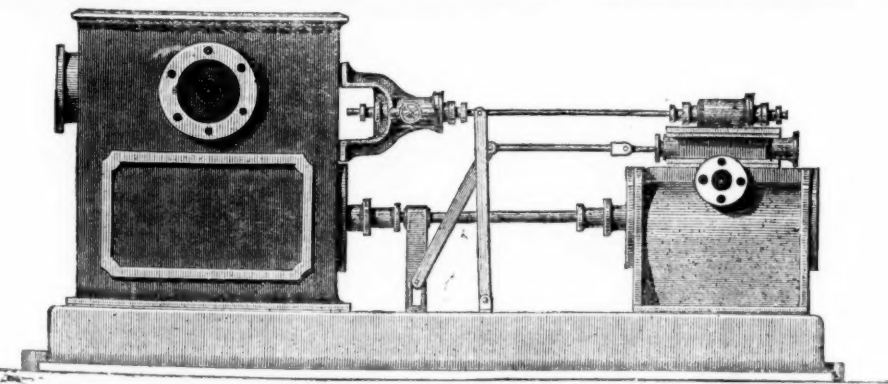
Globe Foundry is One Minute's Walk from the Pendleton Bus Office, and Four Minutes' from Pendleton Railway St.

## HATHORN, DAVIS, CAMPBELL, AND DAVEY,

SUN FOUNDRY, LEEDS,

MAKERS OF THE

## PATENT SEPARATE CONDENSER.



Also Compound and Single-cylinder DIFFERENTIAL EXPANSIVE and CONDENSING PUMPING ENGINES—DAVEY'S PATENT. Steam Pumps of various kinds. Hydraulic Pumps for dip workings. Winding Engines. Compound Rotative Engines. High and Low-pressure Steam Boilers, &amp;c.

FURTHER PARTICULARS ON APPLICATION.

BENNETTS' SAFETY FUSE WORKS,  
ROSKEAR, CAMBORNE, CORNWALL.BLASTING FUSE FOR MINING AND ENGINEERING  
PURPOSES,

Suitable for wet or dry ground, and effective in Tropical or Polar Climates.

W. BENNETTS, having had many years experience as chief engineer with Messrs. Bickford, Smith, and Co., is now enabled to offer Fuse of every variety of his own manufacture, of best quality, and at moderate prices.

Price Lists and Sample Cards may be had on application at the above address.  
LONDON OFFICE,—H. HUGHES, Esq., 85, GRACECHURCH STREETTHE PATENT SELF-ACTING MINERAL DRESSING  
MACHINE COMPANY (LIMITED).T. CURRIE GREGORY, C.E., F.G.S.  
OFFICES,—62, ST. VINCENT STREET, GLASGOW.

IMPORTANT NOTICE TO MINE PROPRIETORS.

This company grant licenses, under their patents, for the use, singly or in combination, of the most approved machinery for dressing ores, comprising Stamp Jiggers, Classifiers, and Buddles.

MR. GEORGE GREEN, Mechanical Engineer to the above Company, SUPPLIES MACHINES under the above Company's Patents for DRESSING all METALLIC ORES. Dressing floors having these Machines possess the following advantages:—

- 1.—They are cheaper than any other kind in first outlay.
- 2.—From 60 to 70 per cent. of the labour is saved.
- 3.—Only about one-fourth of the space usually occupied by dressing floors is required.
- 4.—The ore is made clean at one operation, and 5 per cent. of ores otherwise lost is saved.

Drawings, specifications, and estimates will be forwarded on application to—  
GEORGE GREEN, M.E., ABERYSTWITTH, SOUTH WALES.

EXTRACTS FROM TESTIMONIALS RECEIVED:—

MR. C. E. BAINBRIDGE, of the London Company's Mines, Middleton-in-Teesdale, by Darlington, writing on the 27th September, 1873, says:—"After a full season's experience of the very complete Dressing Machine erected by you at our Colberry Mines, we are fully satisfied with our decision to adopt your patents in preference to all others. The machinery does its work as well as we can desire, and better than we anticipated. We are now getting through 70 tons of ore stuff per day, of rich quality. Without your machinery we should have been at a standstill, for we cannot get hands to supply our wants elsewhere. It saves fully one-half of the old wages, and vastly more on the wages we now give, and the saving in ore is not much short of 10 per cent. You can quote from this letter as you think proper."

MR. COULTAS DODSWORTH, of Haydon Bridge, writes, on the 15th January, 1874:—"I have just returned from the Stonecroft and Greyside Mines, where I have seen your 'Patent Ore Dressing Machinery' at work, with which I must say, I was highly pleased. It is decidedly the best machinery I have ever seen for the purpose, the results being as near perfection as possible, and I am quite sure its use in this case will be a very great saving to the company. No large mining establishment should be without your machinery, especially when labour is difficult to procure—a mere fraction of the hands being only required as against the old system, and the work altogether much better done, and a great saving of ore effected. I have heard it said that your machinery is better adapted for poor than for rich ores, but from what I have seen to-day I am quite confident it will do for any kind of ores. I beg not only to congratulate, but also to compliment, you on the great success of your 'Patent Ore Dressing Machinery.' You may use this letter as you think proper."

MR. MONTAGUE BEALE, Managing Director of the Cagliari Mining Company (Limited), says, on May 15th, 1873:—"I have much pleasure in speaking of the great efficiency of your 'Patent Dressing Machinery,' as erected by you at our mines at Rosas, in the Island of Sardinia. You will remember it has always been considered impossible to dress, or rather separate, the minerals our ores contain by machinery, but our captain assures me he gets a constant return of 16 per cent. of lead with the greatest ease, and I know by the returns we are realising the best market price. I consider this company is much indebted to you for the success you have achieved at so small cost. It may interest you to know, from my experience in several of the British possessions, including the whole of the Australian Colonies, that my opinion is I have never seen any dressing machinery that can efficiently, and at so small a cost, dress, and separate metallic ores, however close the mechanical mixture may be, as yours. You can use this letter in any way you like."

The most satisfactory testimonials also have been received from the GREENSIDE MINE COMPANY, Westmoreland; the TALARGOCH MINING COMPANY, North Wales, and others. Copies of these may be had from Mr. GREEN.

Now ready, price 3s., by post 3s. 3d., Fifth Edition; Fifteenth Thousand Copies, much improved, and enlarged to nearly 300 pages.

HOPTON'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measurement, and other information on the moving and propelling power of ventilation, a subject which has caused so much controversy.

The following few testimonials, out of hundreds in Mr. Hopton's possession, speak to the value of the work:—

"The book cannot fail to be well received by all connected with collieries."—*Mining Journal*."Such a work, well understood by miners, would do more to prevent colliery accidents than an army of inspectors."—*Colliery Guardian*."Its contents are really valuable to the miners of this country."—*Miners' Conference*.

"I have works priced £4 that do not contain the same information."—W. W. KENRICE, Colliery Viewer.

"The work is replete on the subject of underground management."—M. BANKES, Colliery Proprietor.

"I have had 20 years' management. It is the best work I ever read, and deserves to be circulated in every colliery district."—JOS. EAMES.

"900 copies have been ordered in Wigan alone, and this is but a tithe of those to whom the book should commend itself."—*Wigan Examiner*.

To be had on application at the MINING JOURNAL Office, 26, Fleet-street, London.



## THE MINING SHARE LIST.

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid
1500	Alderley Edge, Cheshire*	10 0 0	—	—	12 1 8	0 5 0	Apr. 1874
2000	All-v-Craig, Talybont*	2 0 0	—	—	0 0 0	0 0 0	Feb. 1873
30000	Bampfylde, Devon*	1 0 0	5	5 5 1/2	0 2 0	0 2 0	June 1873
18000	Blen Carlan, Cardigan* (44 sh.)	3 10 0	—	—	0 10 9	—	—
200	Botalack, St. Just*	118 5 0	59	50 55	619 15 0	5 0 0	Aug. 1872
500	Bronfloy, (25000 Deb. B. Sp. et.)	100 0 0	—	—	0 2 0	0 2 0	June 1873
4000	Brookwood, Buckfastleigh	1 16 0	—	—	0 10 9	—	—
3348	Cargill, s. l., Newlyn	5 0 5	2 1/2	1 1/2 1 1/2	0 5 6	0 2 0	Oct. 1871
6400	Cashwell, Cumberland*	2 10 0	—	—	0 10 0	0 4 0	Aug. 1872
7500	Castle Din, St. Columb*	2 0 0	—	—	0 10 0	0 2 0	July 1873
1000	Carn Bre, St. Ilogan*	35 0 0	60	66 70	308 0 0	1 0 0	Feb. 1874
6000	Cath. & Jane, Penrhynendmeth	5 0 0	—	—	0 7 0	0 7 0	June 1873
2450	Cock's Kitchen, St. Ilogan*	20 4 9	10	9 1/2 10 1/2	11 17 0	0 7 6	Jan. 1873
10240	Devon Gr. Consols, St. Austell*	0 12 0	1 1/2	1 1/2	116 10 0	0 12 0	May 1872
4296	Dolcoath, St. Ilogan*	10 14 10	47	49 51	204 4 2	0 12 0	Jan. 1874
10000	East Baleswidden, St. Sancerre*	1 0 0	—	—	0 2 11 0	0 2 0	Feb. 1874
6144	East Caradon, St. Cleer*	2 14 6	1 1/2	1 1/2	14 19 0	0 2 0	Oct. 1872
300	East Darn, St. Ilogan*	32 0 0	—	—	221 10 0	1 0 0	Apr. 1874
6400	East Pool, St. Ilogan*	0 9 9	9 1/2	9 1/2 10	13 11 3	0 2 6	May 1873
5000	Exmouth, St. Christow*	0 7 5	—	—	0 1 0	0 1 0	May 1873
2000	Foxdale, St. Ilogan*	25 0 0	—	—	80 15 0	0 10 0	Sept. 1872
40000	Great Laxey, St. Ilogan*	1 0 0	1 1/2	1 1/2 12	16 17 0	0 6 0	Sept. 1874
25000	Great West Van, St. Ilogan*	2 0 0	—	—	0 1 0	0 1 0	Sept. 1873
6000	Great Wharf, St. Helston*	40 15 0	7 1/2	7 1/2	15 19 6	0 2 6	June 1872
6000	Green Hurl, St. Ilogan*	0 6 0	—	—	1 8 0	0 2 0	May 1874
1024	Herod-foot, St. Ilogan*	8 10 0	4 1/2	3 4	62 5 0	0 15 0	Oct. 1872
18000	Hingston Downs, St. Calstock* (1 sh.)	—	1 1/2	1 1/2	4 3 0	0 5 0	Dec. 1872
25000	Killalee, St. Tipperary	1 0 0	—	—	0 3 11 1/2	0 6 0	Mar. 1873
400	Lisburne, St. Ilogan*	18 15 0	—	—	562 10 0	1 0 0	Mar. 1874
5120	Lovell, St. Ilogan*	0 10 0	—	—	0 17 6	0 1 6	Jan. 1874
9000	Minera Mining Co., St. Ilogan*	5 0 0	—	—	63 8 0	0 1 0	Feb. 1874
20000	Mining Co. of Ireland, St. Ilogan*	7 0 0	6	5 1/2 6	0 8 0	0 8 0	July 1872
12000	North Laxey, St. Ilogan*	2 10 0	—	—	0 12 6	0 2 6	Jan. 1874
2000	North Laxey, St. Ilogan*	11 9 6	3	2 3	4 13 0	0 12 0	Sept. 1873
7000	Old Treburt, St. Ilogan*	1 0 0	—	—	0 0 9	0 0 9	Feb. 1871
9000	Old Treburt, St. Ilogan*	0 10 0	—	—	0 0 10 1/2	0 10 1/2	Feb. 1874
5000	Pedra-drea, St. Redruth*	8 2 0	—	—	0 5 0	0 5 0	Nov. 1871
5000	Penhalls, St. Agnes*	3 0 0	2 1/2	2 1/2	3 3 0	0 2 0	Jan. 1874
6000	Penrith, St. Ilogan*	2 0 0	—	—	0 1 0	0 1 0	Nov. 1873
9000	Phonix, St. Ilogan*	4 13 4	3 1/2	3 1/2	39 19 0	0 4 0	Nov. 1872
1172	Polberre, St. Agnes*	15 0 0	—	—	1 12 5	0 5 0	Mar. 1872
18000	Prince Patrick, St. Ilogan*	1 0 0	—	—	0 3 0	0 3 0	Oct. 1874
12000	Provident, St. Ilogan*	7 10 0	1 1/2	2 1/2	104 12 6	0 10 0	Sept. 1872
2000	Roman Gravel, St. Ilogan*	7 10 0	16 1/2	16 1/2	3 13 6	0 6 0	Apr. 1874
6000	Shelton, St. Ilogan*	1 0 0	—	—	0 1 0	0 1 0	Feb. 1872
6000	Slimeford Dressing, St. Calstock*	1 0 0	—	—	0 1 1 1/2	0 1 1 1/2	Sept. 1872
512	South Caradon, St. Cleer*	1 5 0	65	50 70	713 0 0	1 0 0	Apr. 1874
5000	South Corn Bre, St. Ilogan*	1 17 6	3	3 3 1/2	0 10 0	0 2 6	July 1872
6000	South Darn, St. Ilogan*	3 6 6	—	—	1 1 6	0 2 6	Nov. 1870
8771	St. Just Amalgamated, St. Ilogan*	3 10 0	—	—	0 9 0	0 4 0	Nov. 1871
12000	Tankerville, St. Ilogan*	6 0 0	10	9 1/2 9 1/2	3 8 0	0 6 0	Feb. 1873
30000	Terras, St. Austell*	1 0 0	—	—	0 3 0	0 1 0	Feb. 1872
6000	Tinor, St. Ilogan*	9 0 0	31	32 34	47 3 0	0 6 0	May 1874
4000	Trumpet Consols, St. Helston*	6 5 0	1 1/2	1 1/2 2	9 11 0	0 10 0	Nov. 1872
15000	Van, St. Ilogan*	4 5 0	27 1/2	25 30	12 9 6	0 12 6	Apr. 1874
30000	W. Chiverton, St. Ilogan*	10 0 0	3	2 3	52 10 0	0 5 0	June 1872
2048	West Wheel Franks, St. Ilogan*	27 3 9	14	13 15	3 12 6	0 5 0	Oct. 1872
512	Wheel Basset, St. Ilogan*	5 2 6	30	25 30	638 10 0	1 10 0	Aug. 1872
4296	Wheel Kitty, St. Agnes*	5 4 6	8 1/2	8 1/2 9 1/2	11 11 6	0 4 0	Mar. 1874
806	Wheel Margaret, St. Ilogan*	15 17 6	1 1/2	1 1/2	82 2 0	0 10 0	May 1872
10000	Wheel Mary, St. Ilogan*	5 0 0	—	—	0 1 0	0 1 0	Jan. 1873
80	Wheel Owles, St. Ilogan*	70 0 0	—	—	523 10 0	4 0 0	Aug. 1872
12000	Wheel Progress, St. Ilogan*	1 0 0	—	—	0 1 0	0 1 0	Mar. 1874
10000	Wheel Russell, St. Ilogan*	1 0 0	—	—	0 1 0	0 1 0	Jan. 1873
10000	Wheel Whisp, St. Ilogan*	1 0 0	—	—	0 1 0	0 1 0	Mar. 1873
25000	Wicklow, St. Ilogan*	2 10 0	3 1/2	3 1/2 3 1/2	52 9 0	0 2 6	Mar. 1872

## FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid
35500	Alamillos, Spain*	2 0 0	2	1 1/2 2	1 3 9	0 2 0	Mar. 1874
20000	Almaden, Spain*	1 0 0	—	—	0 4 3	0 1 0	Mar. 1873
30000	Australian, St. Ilogan*	7 7 6	1 1/2	1 1/2 1 1/2	0 11 6	0 2 0	July 1873
10000	Battle Mountain, St. Ilogan*	5 0 0	—	—	0 10 0	0 10 0	Nov. 1872
15000	Battle Mountain, St. Ilogan*	4 0 0	3 1/2	3 1/2 3 1/2	0 11 6	0 2 6	Mar. 1874
6000	Bensberg, St. Ilogan*	10 0 0	—	—	0 17 4	0 8 0	July 1873
12320	Burns, St. Ilogan*	10 0 0	—	—	0 10 0	0 10 0	Oct. 1872
20000	Cape Copper Mining, St. Ilogan*	7 0 0	28 1/2	28 29	15 15 0	1 0 0	Mar. 1874
140000	Cedar Creek, St. Ilogan*	5 0 0	2 1/2	2 1/2	0 5 0	0 2 6	June 1873
30000	Central American Association, St. Ilogan*	0 15 0	—	—	0 6 0	0 1 0	June 1873
15000	Chicago, St. Ilogan*	10 0 0	—	—	0 16 0	0 4 0	Sept. 1873
21000	Colorado Terrible, St. Ilogan*	5 0 0	4 1/2	3 1/2 4 1/2	0 8 0	0 2 0	Oct. 1871
76162	Don Pedro North of the Rey, St. Ilogan*	0 16 0	—	—	2 5 9	0 2 0	Mar. 1872
23500	Eberhard and Aurora, St. Ilogan*	10 0 0	3 1/2	3 1/2 3 1/2	1 0 0	0 0 0	July 1871
2352	Eldorado, St. Ilogan*	10 0 0	—	—	2 5 0	0 15 0	June 1873
60000	Emma, St. Ilogan*	20 0 0	2 1/2	2 1/2 2 1/2	3 12 0	0 6 0	Dec. 1872
70000	English and Australian, St. Ilogan*	2 0 0	1 1/2	1 1/2 1 1/2	2 7 3	0 2 6	Mar. 1873
5000	Flagstaff, St. Ilogan*	10 0 0	4 1/2	4 1/2	4 2 0	0 3 0	Apr. 1872
25000	Fortuna, St. Ilogan*	2 0 0	5 1/2	4 1/2 5 1/2	4 4 4	0 5 0	Mar. 1874
30000	Gold Run, St. Ilogan*	1 0 0	—	—	0 2 4	0 4 0	Oct. 1872
80000	Kapunda Mining Co. Australia*	1 3 0	—	—	0 2 4	0 6 0	June 1873
20000	Last Chance, St. Ilogan*	5 0 0	2 1/2	2 1/2	0 14 0	0 2 0	July 1873
15000	Linares, St. Ilogan*	3 0 0	4	3 1/2 4	14 10 0	0 7 6	Mar. 1874
7837	Lusitania, Portugal* (45 shares)	3 0 0	1 1/2	1 1/2 1 1/2	1 11 6	0 1 6	Mar. 1873
15000	Mammoth Copperworks of Utah, St. Ilogan*	10 0 0	—	—	0 5 0	0 5 0	Dec. 1872
5000	Mountain Chief, St. Ilogan*	30 0 0	—	—	0 4 0	0 4 0	Jan. 1873
18000	Prussian Mining & Ironworks, St. Ilogan*	30 0 0	—	—	0 6 0	0 3 0	Apr. 1872
10000	Pontgibaud, St. Ilogan*	20 0 0	22	20 22	14 16 1	1 3 0	Dec. 1873
100000	Port Phillip, St. Ilogan*	1 0 0	—	—	1 8 0	0 1 0	Jan. 1872
44000	Richmond Consols, St. Ilogan*	8 0 0	7 1/2	7 1/2	1 12 6	0 5 0	Mar. 1874
120000	Richmond Australian Mining Co. St. Ilogan*	1 0 0	1 1/2	1 1/2 1 1/2	15 per cent.	—	May 1874
112500	Sierra Buttes, St. Ilogan*	2 0 0	2 1/2	2 1/2	0 8 0	0 2 0	Dec. 1873
60000	South Aurora, St. Ilogan*	5 0 0	—	—	0 14 2	0 2 0	Nov. 1873
15000	Swetland Creek, St. Ilogan*	4 0 0	4 1/2	4 1/2 4 1/2	2 12 0	0 4 0	Mar. 1874
20000	Tolima, St. Ilogan*	4 0 0	—	—	0 11 6	0 6 0	May 1874
500	Western Andes, St. Ilogan*	20 0 0	—	—	54 0 0	0 20 0	Dec. 1873
15000	Western Andes, St. Ilogan*	3 10 0	2 1/2	2 1/2	0 3 7	0 1 0	Jan. 1874

## NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
20000	Anglo-Australian, <i>g</i> , Victoria*	2 10 0	—	—	Sept. 1872
20000	Australian United, <i>g</i> , Victoria*	2 10 0	15½	13½ 15½	July 1872
3000	Bellavista, <i>g</i> , Peru (£10 shares)	10 0 0	—	—	Oct. 1872
30000	Blue Tent, <i>hgd.</i> , California	5 0 0	5½	—	Fully pd.
50000	Braganza, <i>g</i> , Brazil†	0 15 0	—	—	Oct. 1870
12000	Camp Floyd, <i>g</i> , Utah*	10 0 0	—	—	Fully pd.
55000	Cesena Sulphur Company, Romanga, Italy*	10 0 0	—	—	Fully pd.
60152	Chlorides, <i>g</i> , <i>s</i> , Nicaragua*† (and 12,542 of £1 15s.)	2 0 0	3½	3½ 3½	Fully pd.
4000	Clifton, <i>g</i> , Colorado*	5 0 0	—	—	Feb. 1872
10000	Crescent, <i>g</i> , Plumas County, California*	10 0 0	—	—	July 1872
10000	Cuiaba, <i>g</i> , Minas Gerais, Brazil*	0 17 6	—	—	July 1872
10000	Douglas, <i>g</i> , Georgetown, Col.	5 0 0	—	—	Fully pd.
7500	East Sheboygan Preference* (40,000 ordinary shares)	2 0 0	—	—	—
35000	Excelsior Hydraulic Gold Washing Co., California*	6 0 0	—	—	Dec. 1871
60000	Exchequer, <i>g</i> , <i>s</i> , California*	1 0 0	—	—	Fully pd.
55000	Frontino and Bolivia, <i>g</i> , New Granada†	2 0 0	3½	3½ 3½	Fully pd.
50000	General Brazilian, <i>g</i> *	1 0 0	—	—	Fully pd.
10000	Georgetown Tunnel Co., Georgetown, Col.	7 0 0	—	—	Fully pd.
40000	Holme Valley, <i>g</i> , California	7 0 0	1	—	July 1873
6000	Hormehos, <i>g</i> , <i>s</i> , <i>t</i> (£10 shares)	7 0 0	—	—	Jan. 1874
20000	Imperial Brazilian Collieries, Brazil*	5 0 0	—	—	Fully pd.
2000	Independence, <i>g</i> , California*	5 0 0	2½	2½ 3	Fully pd.
20000	I. X. L., <i>g</i> , <i>s</i> , California*	5 0 0	—	—	Fully pd.
50000	Javali, <i>g</i> , Nicaragua*	2 0 0	3½	3½ 3½	Fully pd.
12000	Lanestosa, <i>g</i> , <i>s</i> , <i>t</i> , Vizcaya, Spain (42 shares)	1 10 0	—	—	Jan. 1874
65000	London and California, <i>g</i> †	2 0 0	—	—	—
75000	Malabar, <i>g</i> , Colombia* (65000 issued)	1 0 0	7½	3½ 3½	Fully pd.
40000	Malaga, <i>g</i> , Spain*	1 0 0	—	—	Fully pd.
12000	Malpaga, Colombia* (10000 pref. sh. 50¢ paid)	1 0 0	7½	3½ 3½	Fully pd.
20000	Menzenberg, <i>g</i> , Honf., Germany*	5 0 0	—	—	Fully pd.
14000	Montagne & Waverley Gold Quartz Crushing Co., N. Scot.	2 0 0	—	—	Allotment
6000	Monte Loreto, <i>g</i> , <i>c</i> , Italy*	5 0 0	—	—	Fully pd.
15000	New Pacific, <i>g</i> , <i>s</i> , Nevada*	0 7 6	3½	3½ 3½	Jan. 1874
60000	New Quebrada, <i>g</i> , Venezuela*	5 0 0	3½	3 3½ 3 3½	Fully pd.
50000	New Rosario, <i>g</i> , Mexico*	1 0 0	1	3½ 3½	Fully pd.
20000	New Zealand Kapanga, <i>g</i> , Cote d'Or*	5 0 0	5	4 4½	Fully pd.
10000	Newfoundland, <i>g</i> *	10 0 0	—	—	Fully pd.
20000	North American, <i>g</i> *	4 0 0	—	—	Fully pd.
50000	Pamlico, <i>c</i> , Chili†	4 0 0	13½	1 13½	Fully pd.
60000	Pestarena United, <i>g</i> , Italy†	3 0 0	3½	1½ 3½	Fully pd.
50000	Rica, <i>g</i> , Colombia* (40000 issued)	1 0 0	3½	3½ 3½	Fully pd.
100000	Rio Tinto, <i>g</i> , <i>c</i> , Huelva, Spain	6 10 0	7	6¾ 7½	Jan. 1874
100000	Rossa Grande, <i>g</i> , Brazil† (£1 shares)	0 19 0	3½	3½ 3½	July 1872
32500	Russia Central, <i>g</i> , <i>s</i> , Naha*	10 0 0	—	—	Fully pd.
10000	Russia Central, Orenburg, and Ural	10 0 0	8½	2½ 8½	Fully pd.
25000	San Pedro, <i>c</i> , Chili†	2 0 0	—	—	Fully pd.
50000	Santa Barbara, <i>g</i> , Brazil	0 7 6	1	¾ 1	Mar. 1872
10000	Silver Plume, <i>s</i> , Colorado*	1 0 0	—	—	Fully pd.
37500	Snowdrift, <i>s</i> , Colorado*	2 0 0	—	—	Fully pd.
£25000	St. John del Rey *† (45 stock and its multiples can be dealt in)	—	260	270 260	8 Stock
26000	St. Lawrence, <i>g</i> , California	5 0 0	5	—	Fully pd.
25000	Star of Nevada, <i>g</i> (12000 issued)	2 0 0	—	—	Fully pd.
10000	Thornhill Reef, <i>g</i> , Australia†	1 0 0	13½	1 13½	Fully pd.
20000	Thornhill Reef, <i>g</i> , Australia†	1 0 0	13½	3½ 3½	Fully pd.
43174	United Mexican, <i>s</i> , Mexico*†	28 7 8	4½	5 5½	Mar. 1868
14000	Utah, <i>g</i> , <i>s</i> , <i>t</i> , Utah*	5 0 0	13½	13½ 13½	Fully pd.
75000	Yorke Peninsula, <i>c</i> , South Australia	1 0 0	¾	¾ ¾	Fully pd.